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The Insufficiency of Antitrust Analysis for Patent Misuse

ROBIN C. FELDMAN*

Patent misuse lies at the intersection of patent and antitrust law. The history and conceptual overlap of patent law and antitrust law have left the doctrine of misuse hopelessly entangled with antitrust doctrines. In response, a number of scholars and legislators have argued for streamlining the patent misuse inquiry by applying antitrust rules.¹ Current court decisions have moved in this direction as well.²

The notion of applying antitrust rules to test for patent misuse has an appealing logic. Patent misuse can be defined as an improper attempt to expand a patent. Antitrust principles, among other things, restrict the improper expansion of monopolies. Shouldn't courts be able to use antitrust rules to identify an improper expansion of a patent monopoly?

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1. See, e.g., *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 512 (7th Cir. 1982); *Windsurfing Int'l Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986); Mark A. Lemley, *The Economic Irrationality of the Patent Misuse Doctrine*, 78 CAL. L. REV. 1599 (1990); Competition Policy and the Patent Misuse Doctrine, Remarks by Roger B. Andewelt, Chief Intellectual Property Section, Antitrust Division Before the Bar Association for the District of Columbia Patent, Trademark, and Copyright Section, Nov. 3, 1982, reprinted in 25 PAT. TRADEMARK & COPYRIGHT J. (BNA) 41 (1982); *infra* notes 100-01 (concerning the debate surrounding the 1988 Patent Act Amendments); see also Note, *Is the Patent Misuse Doctrine Obsolete?*, 110 HARV. L. REV. 1922, 1939 (1997) (arguing that although the substantive test for misuse should be subsumed under an antitrust analysis, the relaxed standing requirements of misuse should be maintained); but see Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1818-20 (1984) (arguing that neither patent nor antitrust law should reign supreme and suggesting that courts should determine whether a patentee's practice is acceptable by calculating a ratio that compares (1) the patentee's marginal reward over the optimal patent reward to (2) society's marginal monopoly loss in the case of that practice).

2. See *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998); *B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1428 (Fed. Cir. 1997); *Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997); *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992).

The approach is particularly appealing given that antitrust law is a larger and more fully developed body of law than patent misuse.³ Applying antitrust rules could provide greater clarity in patent misuse doctrine and eliminate a source of confusion at the intersection of patent and antitrust law.

Theoretical arguments in favor of applying antitrust rules to test for patent misuse assume that antitrust rules can adequately identify the types of harm that patent misuse is designed to address. This Article argues that the assumption is unfounded. Antitrust law is designed to address only particular types of harm, and it cannot reach everything that patent policy addresses. Thus, applying antitrust rules to test for patent misuse would ignore significant concerns under patent policy.

The goal of patent law is to promote the progress of science for the overall benefit of society. Patent rights are offered to induce inventions whose creation and disclosure will benefit society. It is the overall benefit to society, rather than the benefit to an individual inventor, that is paramount in the patent system.

Within this structure, limiting the time and scope of a patent limits the potential economic harms that may flow from granting a patent. Such potential harms include the type of monopoly effects that raise concerns under antitrust law, but they are not confined to this effect. Potential harms also include (1) other types of economic waste, such as the waste that can occur with defensive research or inventing around a patent, (2) the burden on innovation that can result from an overproliferation of patent rights, and (3) the disincentives to innovation that can result from allocating reward to early-stage inventors over late-stage inventors.

Thus, limiting an individual patent enhances the overall efficiency of the patent system in its quest to promote the inventions that will eventually enter into the public domain. Altering the limits on time and scope threatens to upset the balances struck in the system.

Antitrust law, however, would not necessarily be sensitive to these policy dictates. In order to create the harm that antitrust law recognizes, a firm ordinarily must have market power. Without market power, a firm cannot raise prices, limit supplies, and create the type of anticompetitive effects that antitrust law recognizes. Thus, where no market power exists, antitrust is generally unconcerned by firm behavior. This is particularly true for the rule of reason, which always requires a finding of market power.

3. See, e.g., *USM Corp. v. SPS Techs., Inc.*, 694 F.2d 505, 512 (7th Cir. 1982) (arguing that if patent misuse is not tested by conventional antitrust principles, our law is not rich in alternative concepts of monopolistic abuse).

A patent, however, does not necessarily result in market power. No one may be interested in the patented invention or there may be sufficient substitutes such that the patent holder does not have power in a properly defined market. One who holds a patent on a process for making margarine, for example, must still compete with those who use other processes.

Using an antitrust test to decide whether a firm has engaged in behavior that impermissibly extends a patent will only stop extensions by firms that have market power. Patent policy, however, does not limit its concerns to firms with market power. The patent rules do not say, for example, that we grant a patent for twenty years, but the twenty-year limit only applies to patent holders who have market power.

Even if a patent holder does have market power, antitrust still may be insufficient to capture the full range of patent policy concerns. Patent policy is concerned with extensions of patent rights that hamper system-wide innovation, even if those extensions do not create the type of effects that the antitrust ear is tuned to hear. Antitrust, with its focus on price effects in particular markets, may not be sensitive enough to respond to behavior that threatens the overall efficiency of the patent system. In short, if we use antitrust to test for patent misuse, we may be blind to significant concerns under patent policy.

In addition to the theoretical discussion described above, this Article uses the example of Reach-Through Royalties to highlight the problems of testing for patent misuse by applying antitrust law. Reach-Through Royalties are a licensing arrangement used in the biotech industry in which the patent holder charges a royalty based on a percentage of the sales of any product developed using the patented invention. For example, suppose John gives Mary a license to use the cloning method he has patented. With a Reach-Through Royalty, Mary agrees to pay a percentage of her sales revenue from any medicine, diagnostic test, or other product she may eventually develop from what she discovers using the cloning method.

Reach-Through Royalties raise potential patent misuse problems, both in terms of extending the time and expanding the scope of the patent grant. Antitrust rules would not detect the full range of either the time or scope problems raised.

During the development of the patent misuse doctrine in the early 1900s, the Supreme Court considered and rejected applying antitrust law to test for patent misuse.⁴ The Court concluded that patent misuse is aimed at behavior that does not necessarily violate the antitrust laws and

4. See *infra* Part I.

that patent misuse claims should be tested according to patent policy, not antitrust rules.⁵

The Federal Circuit, however, has changed patent misuse by inserting an antitrust test. Current Federal Circuit opinions note that patent misuse is aimed at practices that do not necessarily violate the antitrust laws but then proceed to test for patent misuse by applying antitrust rules.⁶ In particular, as the general rule for testing patent misuse, current cases require application of the antitrust Rule of Reason. The result is a confusing tangle of doctrine that distorts both patent misuse and antitrust.

Part I of this Article describes the history of the doctrine of patent misuse and explains the cross-currents the Supreme Court was navigating when the doctrine first emerged. Part II analyzes current Federal Circuit doctrine and describes how the doctrine veered off course. Part III describes the insufficiency of antitrust as a test for patent misuse. Part IV discusses Reach-Through Royalties as an example of how applying antitrust analysis to test for patent misuse fails to capture significant patent policy concerns.

I. HISTORY AND THEORY OF PATENT MISUSE

Patent misuse is generally defined as an impermissible attempt to extend the time or scope of the patent grant.⁷ It is an affirmative defense to patent infringement. If a patent holder has misused its patent, courts will refuse to enforce the patent against any infringer.⁸ The patent holder will be denied relief until the abusive practice has been abandoned and the effects of the practice have dissipated.⁹

A finding of patent misuse will not result in monetary damages. The remedy for patent misuse is to render the patent unenforceable.¹⁰

5. See *infra* Part I.

6. Precedents that do not seem to fit within this rule are explained as instances of behaviors that have been designated as *per se* misuse or *per se* not misuse. See *infra* note 137.

7. See, e.g., *Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 343-44 (1971) (explaining that patent monopolies should be free from fraud and inequitable conduct, a principle manifested in a series of decisions in which the Court has condemned attempts to broaden the physical or temporal scope of the patent monopoly); 6 DONALD S. CHISUM, CHISUM ON PATENTS § 19.04 (2001).

8. Upon a finding of misuse, a court will refuse to enforce the patent against any infringer, even one who was not harmed by the abusive practice. See *id.*

9. See, e.g., *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998) (noting that a holding of misuse renders the patent unenforceable until the misuse is purged but does not invalidate the patent).

10. See, e.g., *B. Braun Med. Inc. v. Abbott Labs.*, 124 F.3d 1419, 1428 (Fed. Cir. 1997) (monetary damages not awarded under a declaratory judgment counterclaim based on patent misuse because patent misuse simply renders the patent unenforceable).

A. EARLY HISTORY

Early stirrings of the patent misuse doctrine can be traced to cases in the late nineteenth and early twentieth centuries. This period saw the passage of state and federal antitrust laws outlawing unreasonable restraints of trade and other anticompetitive behavior.¹¹

During this time, patent defendants complained of schemes by patent holders to do precisely what the antitrust laws were designed to forbid: monopolize markets, fix prices, and create tying arrangements.¹² This raised the specter that patent holders were using the patent laws as an end-run around the antitrust laws.

Early case law did offer patent holders an opportunity to avoid antitrust law with impunity. Patent holders entered into agreements or imposed restrictions on the use of an invention that created market effects forbidden under the antitrust laws. Patent holders then avoided antitrust scrutiny by arguing that patent law provides an absolute shield, allowing the imposition of any restriction or agreement related to the use of an invention.¹³

Claims that patent rights were being abused arose in three different types of suits: affirmative claims for violation of the antitrust laws; defensive claims to fend off an infringement suit; and defensive claims to fend off a breach of contract suit involving a patent license. The underlying doctrinal problem, however, remained the same for all three. Could a body of case law granting monopolies be reconciled with a body of case law curtailing monopolies, and if not, which one should be subservient to the other?

Some early cases suggested resolving the tension by drawing a distinction between rights gained by patent and rights secured by private contract. According to this view, rights arising under patent law would not be subject to antitrust scrutiny but only to scrutiny under patent principles. Rights gained by contract, however, could be subject to an inquiry

11. Congress approved the Sherman Act in 1890 and the Clayton Act in 1914. See Note, *Patent Rights and the Antitrust Laws*, 17 COLUM. L. REV. 542, 542 nn.1, 2 (1917).

12. See, e.g., *Strait v. Nat'l Harrow Co.*, 51 F. 819 (N.D.N.Y. 1892) (monopolizing markets); *Bement v. Nat'l Harrow Co.*, 186 U.S. 70 (1902) (price-fixing); *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912) (tying); *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896) (tying).

13. For example, during Senate hearings, a German manufacturer commented that he had no reason to get excited about American antitrust law if he wanted to control the distribution of markets. He could accomplish the same goal through patent licensing. See F. MACHLUP, SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF SENATE COMM. ON JUDICIARY, 85TH CONG., 2D SESS., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 15 at n.56 (Comm. Print 1958) (citing Hearings before the S. Comm. on Patents on S. 2303 and S. 2491, pt. 3, p. 1318 (1942)).

into the nature and character of the agreement, including whether the agreement constituted an unreasonable restraint of trade.¹⁴

Patent law itself appeared to offer few limitations on a patent holder's behavior, particularly the types of behavior defendants were complaining about. The first wave of cases decided during this period concluded that patent rights were quite broad. A patent confers the right to exclude others from making, using or selling the invention. As a corollary to these rights, a patent holder may choose to completely withhold the patented invention from the market.¹⁵ In early opinions, the courts reasoned that if a patent holder had the right to withhold the invention, this included the lesser right of dictating the terms on which others might use the invention.¹⁶ How could the law restrict any terms a patent holder might impose if the patent holder could refuse to license on any terms?

Although patent law offered little relief, one might have expected defendants to fare better against breach of contract claims. Early Supreme Court cases, however, seemed to close down the possibility of

14. See *Henry v. A.B. Dick*, 224 U.S. at 29–30 (noting in dicta that the general rule in a patent infringement suit is absolute freedom as to the terms imposed on users whereas in a suit to recover damages upon a contract, one could conceivably defend on the grounds that the contract was against public policies such as the antitrust laws), *overruled on other grounds* by *Motion Picture Patents Co. v. Universal Film Mfg.*, 243 U.S. 502, 514–17 (1917); *Strait v. Harrow*, 51 F. 819, 820 (N.D.N.Y. 1892) (noting that if a patentholder sued for breach of contract, it might be pertinent to inquire into the nature of the agreement while in a suit for patent infringement, such an inquiry would be inappropriate).

The *Strait v. Harrow* court found further support for the distinction between patent and antitrust law by an analogy to land law. See 51 F. at 820 (N.D.N.Y. 1892) (arguing that the law would not decline to enforce trespass rights just because you were doing something illegal with your land); see also 16 DONALD S. CHISUM, CHISUM ON PATENTS § 19.04[1][a] (2003) (describing the *Strait v. Harrow* analogy to land law). But see Mortimer Feuer, *The Patent Monopoly and the Anti-Trust Laws*, 38 COLUM. L. REV. 1145, 1174 (1938) (suggesting logical flaws in a similar analogy).

15. See *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 Fed. 288, 294–95 (6th Cir. 1896); see also *Henry v. A.B. Dick*, 224 U.S. at 28 (1912). As described below, the Supreme Court later would reject the notion that the right to completely withhold an invention from the market includes the lesser right of permitting others to use the invention on whatever terms the patent holder wishes. See text accompanying notes 23–27, *infra*; *Motion Picture Patents*, 243 U.S. at 514–17. The rule that a patent holder may completely withhold an invention from the market continued, however, and was eventually codified in the 1988 Amendments to the Patent Act. See 35 U.S.C. § 271(d)(4) (2000) (stating that “[n]o patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent”). The interplay between a patent holder's right to withhold an invention and antitrust law's potential liability for “refusals to deal” continues to confound modern courts. See generally Peter M. Boyle et al., *Antitrust Law at the Federal Circuit: Red Light or Green Light at the IP-Antitrust Intersection?*, 69 ANTITRUST L.J. 739 (comparing *In re Independent Serv. Organizations Antitrust Litig.*, 203 F.3d 1322 (Fed. Cir. 2000), cert. denied *sub nom.* CSU L.L.C. v. Xerox Corp., 531 U.S. 1143 (2001), with *Image Technical Services Inc. v. Eastman Kodak Co.*, 125 F.3d at 1195 (9th Cir. 1997)).

16. See *Henry v. A.B. Dick*, 224 U.S. at 35 (noting that the larger right embraces the lesser of permitting others to use upon such terms as the patentee chooses to prescribe); *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896) (same).

raising antitrust defenses in cases sounding in contract as well as those sounding in patent. This viewpoint appeared in dicta in *Henry v. A.B. Dick*, a case involving tying behavior by a patent holder.¹⁷ The logic of *Henry v. A.B. Dick* also suggested that affirmative claims for violation of the antitrust laws against patent holders also would fail.¹⁸

The issue reached a climax for the Supreme Court in the *Motion Picture Patents* case, in which the patent holder brought an infringement suit

17. In *Henry v. A.B. Dick*, the Supreme Court rejected an antitrust defense to a claim of patent infringement. In dicta, the Court noted that if the suit had been one to recover damages for breach of contract, rather than for patent infringement, defendants could have raised public policy defenses such as antitrust. 224 U.S. at 29–30. The Court, however, then cited an earlier Supreme Court opinion that had rejected an antitrust defense to a claim for breach of contract by arguing that Congress could not have intended the Sherman Act to apply to patents at all. *Id.* (citing *Bement v. Nat'l Harrow Co.*, 186 U.S. 70, 92 (1902)); see also *Tying Clause Contract Limiting Use of Patented Article Invalidated—The Mimeograph Case* (*Henry v. A.B. Dick Co.*, 224 U.S. 1) *Overruled*, Vol. 84 No. 18 CENT. L.J. 335, 335–36 (1917). Thus, the *Henry v. A.B. Dick* opinion suggested that antitrust would fail as a defense against a claim for breach of contract, as well as against a claim for patent infringement.

The *Bement* Court had argued the following:

It is true that it has been held by this court that the act included any restraint of commerce, whether reasonable or unreasonable. But that statute clearly does not refer to that kind of a restraint of interstate commerce which may arise from reasonable and legal conditions imposed upon the assignee or licensee of a patent by the owner thereof, restricting the terms upon which the article may be used and the price to be demanded therefor.

186 U.S. at 92 (citations omitted).

The *Bement* case makes most sense when considered in its historic context. The Sherman Act prohibits every contract in restraint of trade. Taken literally, the language could prohibit almost any business agreement. See *Nat'l Soc'y of Prof'l Engineers v. United States*, 435 U.S. 679, 688 (1978). Given the extensive reach of the language, the Supreme Court eventually interpreted the Sherman Act to forbid only those agreements that “unreasonably” restrain trade. See *Feuer*, *supra* note 14, at 1172.

The foundations of this test were laid in the case of *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1, 62 (1911). See *Continental T.V., Inc. v. Sylvania Inc.*, 433 U.S. 36, 49 (1977) (describing the traditional judicial gloss on the statutory language). The *Bement* case, however, was decided prior to *Standard Oil* and at a time when the Court was still struggling to define the reach of the antitrust laws. The Court may have been willing to move contracts relating to patents out of the path of the antitrust laws when the antitrust laws seemed so insatiable.

18. See *supra* note 17. Congress responded to some of the implications of the *Henry v. A.B. Dick* case in the passage of an amendment to the antitrust laws known as the Clayton Act. The Clayton Act provides, among other things, that tying can form the basis of an antitrust violation. See 15 U.S.C. § 14 (2000); see also *Motion Picture Patents Co. v. Universal Film Mfg.*, 243 U.S. 502, 517 (1917). Tying occurs when a firm agrees to sell a product only on condition that the buyer purchases a different product as well or agrees not to purchase a second product from another supplier. See *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5–6 (1958); see also H.R. Rep. No. 63-627, pt. 1, at 13 (1914) (describing tying). The Clayton Act specifically refers to agreements relating to goods “whether patented or unpatented.” See 15 U.S.C. § 14 (2000). With this language, Congress expressed its intent that contracts involving the exercise of patent rights should be subject to an affirmative claim for violation of the antitrust laws, at least in the case of tying. The Clayton Act language, however, did not answer the question of whether such contracts should be subject to other antitrust claims or whether infringement defendants could assert the Clayton Act, or any other state or federal antitrust provisions, as a defense.

to enforce restrictions that were squarely in violation of federal antitrust laws.¹⁹ The case arrived on the Supreme Court's doorstep amid rising concerns about increasingly oppressive use of patents.²⁰ In theory, three avenues might have been available to curb patent holder behavior: affirmative claims under the antitrust laws; defensive claims in infringement suits; and defensive claims in breach of contract suits. All three avenues, however, had been called into doubt.

The case concerned post-sale restrictions on a film projector. In particular, the film projector could be used only with film made by the patent holder. Subsequent purchasers of the machine were notified of the restriction by a plaque mounted on the machine.²¹

The Appellate Court found that the patent holder's behavior constituted tying and violated the Clayton Act.²² The Appellate Court used this antitrust finding to bolster its conclusion that the restriction should not be enforced through a patent infringement claim.

The Supreme Court, however, refused to rely on a violation of the antitrust laws, suggesting instead that the proper focus of the analysis should be patent law.²³ Analyzing the problem from the perspective of patent law, the Court reasoned that a patent holder's rights are bounded by the invention itself.²⁴ Thus, attempts to control products not described in the invention are outside the scope of what is granted by patent law,

19. See generally *Motion Picture Patents*, 243 U.S. at 502. When the *Motion Picture Patents* opinion was issued, commentators struggled, with only limited success, to make sense of the opinion and its broader implications. For immediate reaction to *Motion Picture Patents*, see Note, *The Right of the Patentee to Control the Use or Price of a Patented Article upon Resale*, 4 IOWA L. BULL. 40 (1918); *Patents—Restriction on Use—Future Conditions—Notice*, 2 MINN. L. REV. 66 (1917–18); Comment, *Restraint of Trade: Common Law; Patents*, 5 CAL. L. REV. 425 (1916–17); Note, *Patent Rights and the Anti-Trust Laws*, 17 COLUM. L. REV. 542 (1917); *Right of a Patentee to Restrict the Price and the Use of a Patented Article*, 31 HARV. L. REV. 298 (1917–18); *Tying Clause Contract Limiting Use of Patented Article Invalidated—The Mimeograph Case (Henry v. A.B. Dick Co., 224 U.S. 1) Overruled*, Vol. 84 No. 18 CENT. L.J. 335 (1917).

20. For example, the Supreme Court in the *Motion Picture Patents* case noted that patent holders had reacted to earlier cases by adopting restrictions that “expanded into more and more comprehensive forms The perfect instrument of favoritism and oppression which such a system of doing business, if valid, would put into the control of the owner of such a patent should make courts astute, if need be, to defeat its operation.” See *Motion Picture Patents*, 243 U.S. at 515; see also Note, *Contributory Infringement and Misuse—The Effect of Section 271 of the Patent Act of 1952*, 66 HARV. L. REV. 909, 911 (1953) (noting that change in the personnel of the Supreme Court and growing awareness of the monopolistic abuses of tying clauses led to a sweeping limitation in *Motion Picture Patents*).

21. Patents on the film had expired, raising the specter that the arrangement was intended to extend the life of the expired film patents. See *Motion Picture Patents Co. v. Universal Film Mfg.*, 235 F. 398, 400 (2d Cir. 1916).

22. See *Motion Picture Patents*, 243 U.S. at 517; see also *supra* note 19 (describing the passage of the Clayton Act).

23. See *Motion Picture Patents*, 243 U.S. at 509, 514.

24. *Id.*

and the Court refused to enforce such attempts through a claim of infringement.²⁵ This logic repudiated the earlier notion that a patent holder's right to completely withhold an invention from the market embraced the lesser right of restricting the use by almost any terms.²⁶ Not all terms would be acceptable. Terms extending beyond the patented invention do not pertain to rights granted by the patent laws and could not be enforced through a patent infringement claim.

Although declining the invitation to rely on a violation of the Clayton Act, the Supreme Court used the Clayton Act to support its conclusions about the potential evils of tying:

We are confirmed in the conclusion which we are announcing by the fact that . . . [Congress] has enacted a law making it unlawful for any person engaged in interstate commerce "to lease or make a sale or contract for sale of goods . . . *whether patented or unpatented* . . . on the condition, agreement or understanding that the lessee or purchaser thereof shall not use . . . the goods . . . machinery, supplies or other commodities of a competitor . . . where the effect of such lease, sale, or contract for sale . . . may be to substantially lessen competition or tend to create a monopoly in any line of commerce."

Our conclusion renders it unnecessary to make the application of this statute to the case at bar which the Circuit Court of Appeals made of it, but it must be accepted by us as a most persuasive expression of the public policy of our country with respect to the question before us.²⁷

In short, the Court suggested that an analysis of tying in antitrust circumstances would give further insight into tying in the context of patent policy. Just as tying is bad in an antitrust context because it improperly extends a monopoly, so tying is bad in a patent context because it extends the scope of a patent. The logic of the ruling, however, would rest on patent principles.²⁸

Thus, original doctrinal trends had barred all avenues through which a defendant might have complained about improper patent holder behavior. In *Motion Picture Patents*, the Supreme Court opened one avenue by holding that in an infringement suit, a defendant could raise issues related to improper patent holder behavior, issues that would be

25. See *id.* at 508 (infringement cause of action); *id.* at 519 (rejecting the suit).

26. See *id.* at 514-17. For an interesting discussion of how changes in the Court's composition may have contributed to shifts in the relevant legal doctrines, see Comment, *Restraint of Trade: Common Law; Patents*, 5 CAL. L. REV. 425, 426-27 (1916-17).

27. *Motion Picture Patents*, 243 U.S. at 517-18.

28. See, e.g., *id.* at 514, 517-18 (analyzing this infringement claim solely from the perspective of patent law and emphasizing that antitrust law would not be applied). For a good list of articles from the late 1930s and early 1940s exploring the notion that use of a tying clause is outside the scope of the patent monopoly, see *Patents—Extent of Use of Patent—Use of Tying Agreement Bars Patentee in Infringement Suit*, 9 U. CHI. L. REV. 518, 521 n.15 (1941-42).

evaluated under patent law and patent policy. The Court left for another day the question of whether in a breach of contract suit, rather than in an infringement suit, a defendant could raise issues related to inappropriate patent holder behavior or whether such defenses would be barred by the existence of patent rights in the contract.²⁹ Earlier doctrinal trends had suggested that such a defense was barred by the existence of patent rights in the contract, and thus ordinary antitrust defenses would not apply.³⁰

The Supreme Court would eventually hold that in a breach of contract suit, defendants could raise issues related to inappropriate patent holder behavior, despite the existence of patent rights in the contract.³¹ The Court would also find that improper patent holder behavior could form the basis of an affirmative claim for violation of the antitrust laws.³² In both circumstances, the Court would focus on the notion that attempts to expand the time and scope of the patent constituted behavior outside the grant of the patent and beyond the protection of patent law.³³

As a result, behavior that formed the basis of a patent misuse defense could also form the basis of a defense that a contract was void or the basis of an affirmative claim for violation of the antitrust laws.³⁴ In all three settings, patent holders were considered to be acting outside the scope of the patent and therefore could not rely on the protections of the patent law.

29. *Motion Picture Patents*, 243 U.S. at 509. "The extent to which the use of the patented machine may validly be restricted to specific supplies or otherwise by special contract between the owner of a patent and a purchaser or licensee is a question outside the patent law and with it we are not here concerned." *Id.*

30. See *supra* text accompanying notes 13–18.

31. See *Sola Electric Co. v. Jefferson Electric Co.*, 317 U.S. 173 (holding in a breach of contract suit that defendant could raise a defense of illegal price-fixing under the Sherman Act).

32. See *Carbice Corp. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 34 n.4 (1931) (noting that in some cases, the attempt to use the patent unreasonably to restrain commerce is not only beyond the scope of the patent but also a direct violation of the Anti-Trust Acts).

33. For a general description of this notion in a related context, see *Scott Paper Co. v. Marcalus Mfg.*, 326 U.S. 249, 256–57 (1945); see also *supra* notes 29–30; *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1428 n.5 (Fed. Cir. 1997) (noting that precedent has explained that the same actions by a patentee that result in patent misuse may also serve as an element of an affirmative claim for damages. Therefore, a party in defendant's position might be entitled to damages under an antitrust or breach of contract theory); *Senza-Gel v. Seiffhart*, 803 F.2d 661, 668 (Fed. Cir. 1986) (noting that patent misuse may serve, as here, as a defense to a charge of patent infringement but also as an element in a complaint charging antitrust violation); *Mercoird Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 670–71 (1944) (finding of misuse does not dispose of the counterclaim for damages which is more than a defense but a separate statutory cause of action); *Carbice Corp. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 34 n.4 (1931) (noting that in some cases, the "attempt to use the patent unreasonably to restrain commerce is not only beyond the scope of the [patent] but also a direct violation of the Anti-Trust Acts").

34. Courts and litigants do not always use clear language differentiating between finding patent misuse as a defense to infringement and analyzing similar behavior as a defense to damages for breach of contract. See, e.g., *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100 (1969) (holding no

Thus, although it would take the Court some time to fill in the details, *Motion Picture Patents* formed the framework of an analysis the Court would use to try to reconcile patent and antitrust.³⁵ Across a range of issues, the Court would focus on the concept of actions inside and outside the patent grant as a way to define the relationship between patent and antitrust. Navigating this intersection, however, has occupied legions of courts and scholars for generations.³⁶

More specifically, however, the decision in *Motion Picture Patents* established what would become known as the doctrine of patent misuse.³⁷ The Court further developed the doctrine in a series of cases, *Carbice*,³⁸ *Leitch*,³⁹ *Morton Salt*,⁴⁰ and *Mercoird*,⁴¹ against a backdrop of continued national concern about the use of patents.⁴² In particular, in *Morton Salt* the Court amplified its earlier decision by holding explicitly that patent misuse does not require a violation of the antitrust laws.

patent misuse in a breach of contract case). The implications of the two, however, can be quite different. See I HERBERT HOVENKAMP ET AL., IP AND ANTITRUST § 3.3b3 at 3-24 (2002 & Supp. 2003) (noting that although the *Brulotte* case is read as a classic example of misuse, the court merely refused to enforce collection of some of the royalties, rather than refusing to enforce any rights until the misuse effects had dissipated); cf. *Senza-Gel*, 803 F.2d at 668 (complaining that the parties had failed to adequately differentiate between patent misuse behavior in the context of an affirmative claim for antitrust violation and patent misuse behavior in the context of a defense).

35. For example, six years later, the Supreme Court would echo this approach in a Constitutional challenge to the Clayton Act in what is known as the *Second Shoe Machinery Case*. In the *Second Shoe Machinery Case*, the patent holder had argued that the Clayton Act constitutes a taking from patent holders without due process of law. See *United Shoe Mach. Corp. v. United States*, 258 U.S. 451, 462 (1922). The Court upheld the Clayton Act by adhering to the notion that with tying agreements, patent holders act outside the bounds of the legitimate rights granted by the Patent Act. *Id.* at 464. Given that Congress did not interfere with legitimate rights secured by the patent, Congress did not take anything. *Id.* But see Feuer, *supra* note 14, at 1160 (describing the Court's logic as resourcefully tugging at its own bootstraps).

36. See Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1815 (1984) (noting that "the intersection of antitrust law and patent policy has proved to be a source of perpetual confusion and controversy since the passage of the Sherman Act nearly a century ago").

37. See I HERBERT HOVENKAMP ET AL., IP AND ANTITRUST § 3.2 at 3-3 (2002 & 2003 Supp.) (noting that *Motion Picture Patents* case was the first application of the principle of patent misuse); Note, *Contributory Infringement and Misuse—The Effect of Section 271 of the Patent Act of 1952*, 66 HARV. L. REV. 909, 911 (1953) (noting that Court in *Motion Picture Patents* case relied on a rationale that would subsequently form the basis of patent misuse); see also *Mercoird Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 668 n.1 (1944) (referring to the *Motion Picture Patents* case as evidence that the doctrine of patent misuse was developed later than a 1909 case).

38. See *Carbice Corp. v. Am. Patents Dev. Corp.*, 283 U.S. 27 (1931).

39. See *Leitch Mfg. v. Barber Co.*, 302 U.S. 458 (1938).

40. See *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942).

41. See *Mercoird*, 320 U.S. at 661. *Mercoird* presented particularly difficult facts in that the patent covered a combination, a sequence that is new but in which every element is old and unpatentable. See *id.* at 678-79 (Jackson, J., dissenting). Justice Jackson, in a portion of the dissent in which he agreed with the majority, described the patent in the following fashion: "[W]e have an abstract right in an ab-

In *Morton Salt*, plaintiff and defendants both made machines for injecting salt tablets. Plaintiff claimed that the defendant's machine infringed its machine patent. The trial judge dismissed the suit with a one-page order citing a patent misuse case⁴³ on the ground that the plaintiff had illegally tied sales of salt tablets to sales of its machines.⁴⁴ The Seventh Circuit reversed, arguing that the Trial Court should not have granted summary judgment on misuse without evidence that the patent holder's actions violated the Clayton Act.⁴⁵

The Supreme Court reversed, holding that the question for misuse is not whether the patent holder violated the Clayton Act, but whether a court of equity will lend its aid to protect a patent monopoly when the patent is being used to secure rights beyond the scope of the patent and therefore contrary to public policy.⁴⁶ An antitrust violation would not be necessary in order to prove patent misuse nor would antitrust analysis provide the proper test.

In addition, by invoking the notion of public policy, the Court emphasized that the primary purpose of the patent law is to serve the public interest.⁴⁷ This focus on the public interest set the stage for a key implication of the *Morton Salt* opinion: The defendant need not show direct damage from the behavior that qualifies as patent misuse.⁴⁸ Rather, a de-

struse relationship between things in which individually there is no right—a legal concept which either is very profound or almost unintelligible, I cannot be quite sure which.” *Id.* at 679.

42. Such concern prompted one scholar to note in 1938 that “in the past two decades, the patent has emerged as the greatest single monopolistic device.” See Feuer, *supra* note 14, at 1145–46. Similar concerns prompted Congressional inquiries and efforts by President Roosevelt to reform the patent laws. See *id.* at 1145; see also *Mercoid*, 320 U.S. at 667 (expressing concern that if the court enforced the patent rights in the case, patent holders would obtain by contract what patents alone may grant thereby carving out exceptions the antitrust laws, which Congress has not sanctioned).

43. The misuse case cited was *Am. Lecithin Co. v. Warfield Co.*, 105 F.2d 207 (7th Cir. 1939). See *G.S. Suppiger Co. v. Morton Salt Co.*, 31 F. Supp. 876 (N.D. Ill. 1940).

44. See *G.S. Suppiger Co.*, 31 F. Supp. at 876 (N.D. Ill. 1940). The patent holder argued that the misuse argument should prevail because the patent holder could not obtain a full monopoly in salt tablets by its action. The trial court rejected this argument on the grounds that the Clayton Act only required a partial monopoly. See *id.*

45. See *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488, 490 (1942) (describing the seventh circuit opinion).

46. *Id.* at 490, 492.

47. *Id.* at 492.

48. See *Trade Regulation—Attempted Partial Monopoly of Unpatented Product as Defense to Suit for Direct Infringement*, 42 COLUM. L. REV. 882, 884 (1942). The Supreme Court would amplify this logic in the *Mercoid* case, noting that:

[i]t is the public interest which is dominant in the patent system. It is the protection of the public in a system of free enterprise which alike nullifies a patent where any part of it is invalid and denies to the patentee after issuance the power to use it in such a way as to acquire a monopoly which is not plainly within the terms of the grant.

See *Mercoid Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 665–66 (1944) (citations omitted).

fendant has standing to raise any patent holder behavior that qualifies as misuse in a defense against an infringement suit.

For example, in *Morton Salt* the defendant, a maker of salt-injecting machines, was complaining about the patent holder's efforts to monopolize a sector of the salt market.⁴⁹ In an antitrust case, participants in the relevant sector of the salt market might have had standing to complain about the patentee's behavior in that market, but not a maker of the injecting machines.⁵⁰ In *Morton Salt*, however, the Court gave the defendant standing to raise patent holder misbehavior that the defendant could not have raised in an action based on the antitrust laws. This relaxed standing approach reinforces the notion that patent misuse is intended to extend farther than antitrust.

In establishing the relaxed standing approach for the doctrine of misuse, the Supreme Court may have been influenced by the increasingly wide net cast by patent holders as they brought suit against infringers and contributory infringers. For example, consider the *Carbice* case. *Carbice* concerned a firm that held the patent on a container for shipping refrigerated foods using solid carbon dioxide.⁵¹ The novelty of the container consisted of putting the carbon dioxide in the middle of the food, which created additional insulation for the refrigerant.⁵²

In *Carbice*, the patent holder did not bring an infringement suit against someone else trying to sell the patented containers.⁵³ Rather, the patent holder's complaint followed a far more circuitous route. The patent holder brought suit against carbon dioxide sellers on the grounds that

49. *Morton Salt*, 314 U.S. at 490–91. Although the defendant also made salt tablets, the Court specifically noted that nothing turned on that fact and that the case could be resolved by assuming that the defendant only made salt-injecting machines. *See id.* The Court then turned to consideration of the defendant's claim that the patent holder was using its machine patent monopoly to restrain competition in the salt market. *See id.* at 491.

50. *See* Albert R. Henry, *Limitations Inherent in the Grant of Letters Patent*, 27 CORNELL L.Q. 214, 236 (1942) (expressing surprise over the *Morton Salt* case and noting that the remedies under Sections 4 and 16 of the Clayton Act would not have been available to the defendant). The relaxed standing rule has a particularly strong impact as the antitrust standing rules develop more fully. For example, a nascent firm might not be able to meet the preparedness test for antitrust standing and yet could still face an infringement suit. The relaxed standing requirement of the misuse doctrine has received academic attention, both critical and supportive. *See, e.g.*, Mark A. Lemley, Comment, *The Economic Irrationality of the Patent Misuse Doctrine*, 78 CAL. L. REV. 1599 (1990) (critical); *but see* Note, *Is the Patent Misuse Doctrine Obsolete?*, 110 HARV. L. REV. 1922, 1939 (1997) (arguing that although the substantive test for misuse should be subsumed under an antitrust analysis, the relaxed standing requirements of misuse should be maintained).

51. *Carbice Corp. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 29 (1981).

52. *See* Note, *Contributory Infringement in Patent Litigation*, 40 YALE L.J. 1328, 1330–31 (1931).

53. *Carbice*, 283 U.S. at 30.

they were contributing to infringement by those who were using the containers in an unauthorized fashion.⁵⁴

The patent holder in *Carbice* did not make any of the containers it held the patent on nor did it formally license others to make the containers.⁵⁵ Its sole business was manufacturing and selling carbon dioxide.⁵⁶ Each carbon dioxide invoice notified purchasers that they were only permitted to use the carbon dioxide in containers sold or approved by the plaintiff and that containers sold or approved by the plaintiff could only use plaintiff's carbon dioxide.⁵⁷ The Court noted, however, that the plaintiff showed no interest in exercising control over the containers its customers used.⁵⁸

The patent holder brought suit against Carbice, another carbon dioxide seller. Although the Court did not set out the argument clearly in the opinion, plaintiff's argument must have been based on the following logic: The notices on the carbon dioxide invoices constituted an implicit license to use the containers that had been purchased, even though the plaintiff did not tell its customers that certain containers were approved for purchase or give particular container manufacturers the right to sell containers.⁵⁹ The license to use the container was in turn conditioned on using the plaintiff's carbon dioxide. Thus, when the customers switched to purchasing someone else's carbon dioxide, the customers were violating terms of the implicit license to use the patented container. By selling carbon dioxide to plaintiff's customers despite knowledge of the terms on the invoices, Carbice was a contributory infringer.⁶⁰

The Supreme Court characterized the plaintiff's claim as an attempt to require licensees of a patented product to purchase unpatented supplies from the patent holder as well.⁶¹ The Court saw *Carbice* as indistinguishable from *Motion Picture Patents* in that in both cases, patent holders attempted to reach beyond the limits of the rights granted by the patent.⁶² The Court deemed this type of control beyond the scope of the

54. *Id.*

55. *Id.*

56. *Id.* at 29-30.

57. *Id.* at 30.

58. *Id.*

59. *Id.* at 30-31.

60. *Id.* at 30.

61. Modern descriptions of *Carbice* tend to spare readers the torturous details of the case, using instead the Court's characterization of the case as a refusal to license a patented combination to anyone who would not buy supplies from the patent holder. The case details may be useful, however, for understanding the Court's concern that the patent holder appeared to be trying to use a patent in one market to gain control over another market, as well as the Court's eventual development of the relaxed standing requirement in this line of cases.

62. *Carbice*, 283 U.S. at 33.

patent holder's monopoly⁶³ and declined to enforce an infringement suit based upon rights arising under the patent laws.⁶⁴ In an historic context, one can see the Court in the *Carbice* line of cases struggling to ensure that patent holders, by creatively couching their licensing and selectively choosing defendants, could not insulate their behavior from scrutiny.⁶⁵

By the mid-1940s, the Supreme Court had delineated the basic outline of patent misuse. A patent holder commits patent misuse by trying improperly to extend the time or scope of the patent grant. By such behavior, the patent holder acts outside the rights granted under the patent laws. Courts will refuse to enforce patent rights when a patent holder has engaged in misuse, at least until the patent holder has relinquished the misuse and the harm has dissipated.⁶⁶

The logic of patent misuse must flow from the logic of patent policy. Antitrust doctrine may provide insight into why behavior might be suspect under the patent laws. In other words, an analysis of why we dislike tying in antitrust circumstances may provide insight into why we dislike it in the context of patent policy. Nevertheless, the foundation of a patent misuse case must rest on patent principles, not antitrust.

In order to constitute misuse, a patent holder's behavior need not rise to the level of a full antitrust violation. This notion is consistent with the view that patent misuse is tested under patent policy, not antitrust policy. Thus, while the behavior may be insufficient for a Sherman Act or Clayton Act violation, it may still constitute misuse.⁶⁷

B. ARE ALL EXTENSIONS UNREASONABLE?

The doctrine of patent misuse rests on the notion that a patent holder may not try to extend the time or scope of the patent grant. The problem of identifying commercial behavior that extends the time and

63. For a good list of articles from the late 1930s and early 1940s exploring the notion that use of a tying clause is outside the scope of the patent monopoly, see sources cited *supra* note 28.

64. *Carbice*, 283 U.S. at 30.

65. For example, if the antitrust rules, including that antitrust standing rules, had been applied to test for improper patent holder behavior in an infringement suit, patent holders could have chosen to proceed only against indirect infringers. Indirect infringers would not have had standing to raise a variety of improper patent holder behavior, and those with proper standing would not have been a party to the suit. By this tactic, patent holders could have blocked defenses based on improper patent holder behavior.

66. See *Patents—Extent of Use of Patent—Use of Tying Agreement Bars Patentee in Infringement Suit*, 9 U. CHI. L. REV. 518, 520 (1941–42) (citing *B.B. Chem. Co. v. Ellis*, 314 U.S. 495, 497–98 (1942)).

67. See S. REP. NO. 100-83, at 65 (1987) (Senate Judiciary Committee Report, on bill ultimately not adopted by Congress, describing the current status of patent misuse law); *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 140–41 (1960); *Transparent-Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637, 641 (1947) (describing this rule in dicta while citing *Morton Salt Co. v. Suppiger Co.*, 314 U.S. 488 (1942)).

scope of the grant, however, would be more nuanced and difficult than the early decisions might have suggested.⁶⁸ As the doctrine developed further in the 1950s and 1960s, patent holders asked the courts for additional freedom in defining contract terms. Recognizing the need for some flexibility in commercial arrangements, courts would struggle with behaviors that nominally appeared to extend the time or scope of the patent but seemed acceptable under patent principles.

For example, under patent misuse, a patent holder may not extract royalties for use of a patented invention after the patent has expired.⁶⁹ Such an agreement would represent an extension of the time of the patent.⁷⁰ Nevertheless, the Supreme Court in *dicta* signaled its willingness to

68. The practice of tying, which helped launch the doctrine of patent misuse, would prove to be far more complicated than it appeared at the time of the Clayton Act and the early patent misuse cases. In this early period, courts and commentators assumed that all tying should be prohibited thereby requiring application of a *per se* rule against tying.

In a classic *per se* rule under the antitrust laws, we assume that the behavior is so likely to be dangerous that we do not require the type of proof of market power and anticompetitive effects that we require in other types of antitrust cases, and we generally do not allow defenses that might be weighed against the anticompetitive effects. See *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 33 (1984) (O'Connor, J., concurring); 9 PHILIP E. AREEDA, ANTITRUST LAW ¶ 1720a at 258 (1991); Robert H. Bork, *The Rule of Reason and the Per Se Concept: Price Fixing and Market Division*, 75 YALE L.J. 373, 384 (1966). In contrast, the *per se* rule applied in antitrust tying cases has evolved such that antitrust law now requires proof that the defendant has market power and some proof of potential anticompetitive effects and allows a variety of defenses. See Robin C. Feldman, *Defensive Leveraging in Antitrust*, 87 GEO. L.J. 2079, 2109–12 (1999) (describing the *per se* rule in tying cases compared to classic *per se* rules in antitrust). The test is still streamlined in comparison to the broader rule of reason inquiry in antitrust, but it is a far cry from the classic *per se* rule. The implication of this more nuanced approach to tying is that tying is not bad in all cases, at least not in the context of things that concern the antitrust laws.

69. *Brulotte v. Thys Co.*, 379 U.S. 29, 33–34 (1964).

70. See *id.* See also 1 HERBERT HOVENKAMP ET AL., § 3.3b3 at 3–24 (2002 & 2003 Supp.) (noting that although *Brulotte* is considered the classic case for this principle, it is unclear whether the *Brulotte* opinion technically invoked the patent misuse doctrine given that the court merely refused to enforce collection of those royalties that accrued after expiration of the patents).

An interesting aspect of the question of expanding protection beyond what is offered by patent law has been the Supreme Court's efforts to determine the extent to which state trade secret and unfair competition laws can reach to provide protection in areas that might be subject to patent protection before those laws run afoul of the supremacy of federal patent law. The potency of the supremacy doctrine in this area has varied from strong supremacy in the *Sears/Compco* cases to weak supremacy in the *Kewanee* and *Aronson* cases and then to an attempt in *Bonito Boats* to revive the strength of *Sears/Compco* without creating an overly rigid structure while harmonizing the intervening precedents. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989); *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257 (1979); *Kewanee Oil v. Bicron Corp.*, 476 U.S. 470 (1974); *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225 (1964); *Compco Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234 (1964).

In *Aronson*, a case weakening supremacy, the Court took great pains to demonstrate that its decision was consistent with the logic used in *Brulotte* in refusing to enforce a contract for post-expiration royalties. See *Aronson* 440 U.S. at 264–65, 266–67 (majority and concurring opinions both explaining the decision's consistency with *Brulotte*). Although the article's focus is confined to compar-

allow payments that extended beyond the expiration of the patent if they were analogous to extended payments for use prior to the expiration of the patent.⁷¹

The issue arose as part of a series of three cases, which I will refer to as *Radio 1*, *Brulotte*, and *Radio 2*. In these cases, one can see the Court grappling with the question of whether some behaviors that appear to extend the time and scope of the patent might be acceptable under patent principles and searching for a test that would involve some form of equitable balancing.

In *Automatic Radio v. Hazeltine Research* ("*Radio 1*"), the Supreme Court considered a license to use a group of patents in return for a percentage of revenues from the final product.⁷² The license holder challenged the provision as patent misuse on the ground that the agreement could require a payment on sales even if none of the patents was used.⁷³

The Supreme Court rejected this argument, finding that the arrangement was not "unreasonable." Rather, it represented sound business judgment of the most convenient method of fixing value because it allowed the parties to avoid the effort of having to determine whether each radio embodied a particular patent.⁷⁴

In a case from the same period, however, the Supreme Court considered a package license of a dozen patents used in a harvesting machine.⁷⁵ Royalties were based on a percentage of the crop yield and continued to accrue beyond the expiration of all of the relevant patents.⁷⁶ The Court concluded that the arrangement constituted misuse by extending the length of the patent term, but distinguished *Radio 1*, stressing that the arrangement in *Radio 1* was "reasonable and convenient."⁷⁷

Finally, almost twenty years after *Radio 1*, the Supreme Court considered the same licensing practice by the same radio company.⁷⁸ This time, however, the Court framed the question in different terms, and

ing patent misuse and antitrust analysis, an interesting future exploration would be the interaction between patent misuse and the supremacy line of cases.

71. In dicta in *Zenith Radio*, the Supreme Court read *Brulotte* as recognizing that patent holders may lawfully charge a royalty for practicing an invention prior to the expiration date but postpone the payment of those royalties beyond that time. See *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 136 (1969).

72. See *Automatic Radio Mfg., Inc. v. Hazeltine Research, Inc.*, 339 U.S. 827, 829 (1950) [hereinafter "*Radio 1*"].

73. *Id.* at 39.

74. See *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 137 (1969) [hereinafter "*Radio 2*"] (describing *Radio 1*).

75. See *Brulotte v. Thys Co.*, 379 U.S. 29, 29–30 (1964).

76. *Id.*

77. See *id.* at 32–33.

78. See *Radio 2*, 395 U.S. at 100.

reached the opposite result from *Radio 1*.⁷⁹ The Court found that the arrangement potentially required payment for products that did not incorporate the teachings of the patent at all, and concluded that the license extended the scope of the patent beyond the invention specified in the patent grant.⁸⁰

How could one determine, however, whether the agreement was a reasonable business convenience consistent with rights granted under a patent or whether it was the result of improper patent holder behavior? The *Radio 2* Court held that the question would turn on a detailed factual examination of the contract negotiations to determine whether the patent holder used the power of its patent to override the objections of the licensee.⁸¹

The effort to focus on whether the agreement was a reasonable and convenient business arrangement may have flowed from a simple necessity to distinguish *Radio 1*. The focus, nevertheless, is consistent with general doctrines of equity, and it is equity that is applied in a suit to enjoin infringement.⁸² Equity is a question of balance in which the Court will consider whether it would do a greater injury by granting the injunction, for example, than by refusing to act.⁸³ Such a balancing includes an examination of the public interest.⁸⁴

79. The Court may have been more inclined to be hostile towards the licensing arrangement this time given a lower court's finding that the patent holder had participated in a conspiracy to exclude the defendant from the Canadian market in violation of the antitrust laws. See *Radio 2* at 105-07. Thus, the Court in *Radio 2* was willing to accept what was essentially the dissent's argument in *Radio 1*.

80. See *Radio 2*, 395 U.S. at 138.

81. See *id.* at 139-40 (describing the test and remanding for further proceedings under the test).

82. See CHARLES W. BACON & FRANKLYN S. MORSE, *THE REASONABLENESS OF THE LAW* 197, 181-82 (1924) (describing the evolution of the doctrine of equity and noting that the common law provides damages as a remedy while equity evolved to address wrongful acts that cannot be sufficiently addressed by monetary awards); cf. Robert P. Merges, *Reflections on Current Legislation Affecting Patent Misuse*, 70 J. PAT. & TRADEMARK OFF. SOC'Y, 793-94 (1988) (arguing against the pitfalls of relying on a rule of reason analysis and in favor of the flexible judicial approach that has evolved in patent misuse over the years embodied in the notion of reasonableness).

83. See, e.g., *Richard's Appeal*, 57 Pa. 105, 114 (1868) (refusing an injunction against coal burning); see also PETER CHARLES HOFFER, *THE LAW'S CONSCIENCE* 151-52 (1990) (describing post Civil War development of the notion of balancing in equity cases).

84. See, e.g., *Quackenbush v. Allstate Ins. Co.*, 517 U.S. 706, 724 (noting that federal equity courts may refuse to enforce or protect legal rights the exercise of which may be prejudicial to the public interest for it is in the public interest that federal courts of equity should exercise their discretionary power); *City of N.Y. v. Pine*, 185 U.S. 93, 98-99 (1902) (noting that a court of equity is never active in granting relief which would run against conscience or public convenience); *Knoth v. Manhattan R. Co.*, 79 N.E. 1015, 1018 (N.Y. 1907) (a court of equity is not bound to issue an injunction when it will produce great public or private mischief merely for the purpose of protecting a technical or unsubstantial right).

A key maxim of equity dictates that one who requests equity must have clean hands.⁸⁵ This maxim invites examination of the behavior of the patent holder, the party seeking the equitable remedy of an injunction. The principles of equity, however, allow flexibility concerning behavior that appears to constitute unclean hands. For example, suppose a defendant asserts that a suit cannot be maintained because the plaintiff has delayed bringing suit and, therefore, has unclean hands. A court may rule that the delay is reasonable given that it did not affect the equities in the case.⁸⁶ In other words, even behavior that appears to constitute unclean hands may be acceptable depending on how it affects the underlying principles at stake. This notion is consistent with the view that a court, when faced with behavior that appears to extend the physical or temporal scope of a patent grant may ask whether that behavior is nevertheless consistent with underlying patent principles.

The notion of applying a flexible test under equitable principles while following the dictates of patent law is sound. The focus of the Court's inquiry in *Radio 2*, however, is problematic. The Court focused the inquiry on an examination of whether the licensee entered into the agreement voluntarily.⁸⁷ As one authority notes, "[c]ontract law has rightly shied away from inquiring into whether one party 'wanted' to agree to a contractual provision in all but the most egregious cases."⁸⁸ The inquiry invites self-serving testimony and encourages strategic behavior in which parties try to include evidence of voluntariness into the contract.⁸⁹ It is unlikely to provide a helpful dividing line.⁹⁰

85. See *BACON & MORSE*, *supra* note 82, at 196. Interestingly, an early unclean hands case involved what would later become a trademark right. In *Fetridge v. Wells*, 4 Abb. Pr. 144 (N.Y. Sup. Ct. 1857), the manufacturer of a product sold as "The Balm of a Thousand Flowers" sued to enjoin the defendants from manufacturing "The Balm of Ten Thousand Flowers." The court refused to enter the injunction on the grounds that the original manufacturer was perpetrating a fraud on the public because the product was neither a balm nor a cosmetic. See *BACON & MORSE*, *supra* note 82, at 197. The court denied the injunction noting that "[t]hose who come into a court of equity seeking equity, must come with pure hands and a pure conscience An exclusive privilege for deceiving the public is assuredly not one that a court of equity can be required to aid or sanction." *Id.* (quoting the decision).

86. See *Wafer Shave, Inc. v. Gillette Co.*, 857 F. Supp. 112, 128 (D. Mass. 1993).

87. See *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 138 (1969) (noting the importance of exploring the details of the license negotiations to demonstrate that the patent holder coerced the terms at issue in the case and holding that such a conclusion cannot be inferred from the agreement itself); see also *id.* at 141 (Harlan, J., concurring in part and dissenting in part)(arguing that the majority's opinion will require an inquiry into whether the provision was included at the insistence of both parties or only at the will of the patent holder, an inquiry that will be difficult to make).

88. *I HOVENKAMP ET AL.*, *supra* note 37, § 3.3, at 3-22 (discussing *Radio 2* and its progeny).

89. See *id.*

90. Lower courts are mixed on whether to extend the voluntariness inquiry to a related category of cases in which two patents are licensed for a fixed royalty and the patent holder continues to charge the same royalty after one of the patents has expired. See *id.* § 3.3, at 3-25 (describing these cases); 6 *CHISUM*, *supra* note 7, § 19.04[3][d], at 19-476 (noting that these cases fall at the intersection of three

Moreover, focusing on whether the agreement was voluntary ignores the question of whether the agreement is ultimately in the public interest. An agreement may be appealing to both of the parties, yet may still create systemic effects that are inconsistent with the goals of the patent system.⁹¹

C. ABORTED ATTEMPTS TO PROVIDE THAT PATENT MISUSE REQUIRES A VIOLATION OF THE ANTITRUST LAWS

Through the early 1980s, courts defined patent misuse in terms of whether a patent holder had improperly extended the time or scope of the patent grant, a question which was to be answered according to patent principles. In 1986, however, the Federal Circuit reframed the test in antitrust terms. In the *Windsurfing* case, Chief Judge Markey of the Federal Circuit explained that to prove patent misuse, "the alleged infringer must show that the patentee has impermissibly broadened the 'physical or temporal scope' of the patent grant *with anticompetitive effect*."⁹² The Court explained further that the key inquiry in patent misuse should "reveal whether the overall effect of the behavior tends to restrain competition in an appropriately defined market."⁹³

With a few strokes of the pen, the Federal Circuit added a new requirement for patent misuse. To constitute misuse, a patent holder's behavior must not only extend the time or scope of the patent, it must also create anticompetitive effects. The Federal Circuit thereby turned away from the Supreme Court's admonition to test patent misuse by patent policy, blending in a test based on antitrust doctrine.

In support of its language, the Federal Circuit cited a 1971 Supreme Court case, *Blonder-Tongue*. The *Blonder-Tongue* case, however, does not contain *Windsurfing*'s language or its test.⁹⁴

lines of cases: mandatory package licenses, total-sales royalty structures, and post-expiration royalties); compare *Rocform Corp. v. Acitelli-Standard Concrete Wall, Inc.*, 367 F.2d 678, 680 (6th Cir. 1966) (invalidating the agreement as an illegal extension of the patent grant), with *Hull v. Brunswick*, 704 F.2d 1195, 1203-04 (10th Cir. 1983) (agreement could remain in force as long as one patent continued unless the license is involuntary).

91. See *infra* text accompanying notes 199-200 and text following note 212 (describing the potential for Reach-Through Royalties to create improper systemic effects despite the fact that both parties may perceive the agreement to be in their interests).

92. *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986) (emphasis added).

93. *Id.* at 1001-02.

94. See Robert J. Hoerner, *The Decline (and Fall?) of the Patent Misuse Doctrine in the Federal Circuit*, 69 ANTITRUST L.J. 669, 672-73 (2002) (noting that the citation of *Blonder-Tongue* after the words "with anticompetitive effect" could be regarded as misleading because the words did not appear in *Blonder-Tongue*, but were an addition to the quotation by then-Chief Judge Markey); see also Patricia A. Martone & Richard M. Feustel, Jr., *The Patent Misuse Defense—Does It Still Have Viability?*, in INTELLECTUAL PROPERTY ANTITRUST, at 250 (2002) (noting that the Federal Circuit in *Windsurfing*

The Federal Circuit in *Windsurfing* did try to avoid defying Supreme Court doctrine. The *Windsurfing* court suggested that it would only apply the antitrust analysis to behavior that the Supreme Court had not previously declared *per se* misuse.⁹⁵ This approach avoided appearing to contradict the Supreme Court but imposed a limitation in which prior Supreme Court cases would create precedent only for similar behaviors but would not establish general rules for the doctrine of misuse.

This approach echoes *per se* analysis in antitrust law, which courts generally apply only when they have sufficient experience with a type of behavior to predict that the conduct is almost always anticompetitive.⁹⁶ Thus, the Federal Circuit implied that the Supreme Court had not established general rules for patent misuse but merely indicated particular circumstances in which it had sufficient experience to declare that the behavior was most likely anticompetitive. Once again, the Federal Circuit borrowed from antitrust doctrine to limit patent misuse.

Within nine months, however, Judge Markey backed off from the position staked out in *Windsurfing*,⁹⁷ thereby avoiding the appearance of contradicting Supreme Court precedent as well as the less than judicious implication that the Supreme Court did not have sufficient experience for the broad declarations it had made in the patent misuse area. In the *Senza-Gel* case, Judge Markey retreated to the holding that patent misuse did not require antitrust type findings.⁹⁸ In contrast to the declarations in *Windsurfing*, Judge Markey confined his views to a footnote in which he deferred to Congress and the Supreme Court to make the changes attempted in *Windsurfing*.

Commentators and courts have questioned the rationale appearing in Supreme Court opinions dealing with misuse in view of recent economic theory and Supreme Court decisions in non-misuse contexts. [see *Windsurfing*]. We are bound, however, to adhere to existing Su-

ing required antitrust-type findings of relevant market and anticompetitive effects to support a finding of an attempt to extend the scope of the monopoly which are elements not required by existing case law including Supreme Court precedent).

95. *Windsurfing*, 782 F.2d at 1001-02.

96. See *Arizona v. Maricopa County Med. Soc'y*, 457 U.S. 332, 343-44 (1982); see also *Cont'l T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 50 n.16 (1977).

97. See William J. Gilbreth & William H. Steinmetz, *The Patent Misuse Defense—Its Expansion and Contraction*, J. PROPRIETARY RTS. 7, 13 (1992) (noting that in *Senza-Gel*, the Federal Circuit thought better of its pronouncements in *Windsurfing*); Hoerner, *supra* note 94, at 673-74.

98. *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661, 676 (Fed. Cir. 1986). In *Senza-Gel*, the Federal Circuit approved a lower court test for misuse in a tying context that did not require proof of market power or anticompetitive effects. Thus, the Federal Circuit upheld a summary judgment of misuse in favor of the defendant. On a charge of violation of antitrust laws, the court again upheld a lower court finding that the issue could not be resolved on summary judgment, and that the defendant would have to present further evidence of market power and anticompetitive effects. The rulings thereby emphasized the different requirements for patent misuse and antitrust.

preme Court guidance in the area until otherwise directed by Congress or by the Supreme Court.⁹⁹

The *Windsurfing* case arose against the backdrop of a debate over whether to conform patent misuse to antitrust rules. Scholars and legislators weighed in on both sides of the debate,¹⁰⁰ with the Administration backing a proposal to test all patent misuse cases under antitrust standards.¹⁰¹ Arguments in favor of conforming patent misuse to antitrust standards included the notion that patent misuse provides a harsh sanction, that the misuse rules are too rigid for the economic realities of the marketplace, and that the more robust economic doctrines embodied in modern antitrust law would provide better guidance.¹⁰² As Judge Posner noted in the *USM* case, “[o]ur law is not rich in alternative concepts of monopolistic abuse.”¹⁰³

Arguments against conforming patent misuse to antitrust standards included that courts had shown sufficient flexibility in applying the patent misuse rules; that patent misuse serves as a valuable counter-weight to equitable doctrines that favor the patent holder; that technology markets, in which patents frequently operate, have characteristics distinct from other types of markets; and that the antitrust rules are notoriously difficult to apply.¹⁰⁴ As one scholar commented, “[I]t is ironic indeed that advocates of greater certainty in the law of patent misuse would propose a unified rule of reason approach when this is arguably one of the least certain legal rules ever propounded.”¹⁰⁵

In 1988, the Senate passed a bill that would have prohibited a finding of patent misuse unless the patent holder’s “practices or actions or inactions . . . violate the antitrust laws.”¹⁰⁶ In a cloakroom compromise in the waning days of the 100th Congress, however, the House and Senate

99. *Id.* at 665 n.5.

100. Compare Competition Policy and the Patent Misuse Doctrine, Remarks by Roger B. Andewelt, Chief Intellectual Property Section, Antitrust Division Before the Bar Association for the District of Columbia Patent, Trademark, and Copyright Section, Nov. 3, 1982, reprinted in 25 Pat., Trademark & Copyright J. (BNA) 41 (1982), and *USM Corp. v. SPS Technologies, Inc.*, 694 F.2d 505, 511–12 (7th Cir. 1982) (arguing that misuse claims should be tested by conventional antitrust principles), with PREPARED STATEMENT OF Louis Kaplow, Hearings on H.R. 557, Apr. 30, 1987, and Robert P. Merges, *Reflections on Current Legislation Affecting Patent Misuse*, 70 J. PAT. & TRADEMARK OFF. SOC’Y 793 (1988).

101. S. REP. No. 100–83, at 67 (1987) (reporting on bill embodying the approach passed by the Senate but not ultimately adopted).

102. See sources cited *supra* notes 100–01.

103. *USM Corp. v. SPS*, 694 F.2d at 512.

104. See sources cited *supra* notes 100–01.

105. Merges, *supra* note 82, at 794.

106. Jere M. Webb & Lawrence A. Locke, *Intellectual Property Misuse: Developments in the Misuse Doctrine*, 4 HARV. J.L. & TECH. 257, 264 (citing Intellectual Property Antitrust Protection Act of 1988 S. 438 § 201, 100th Cong. § 201 (1988)).

reached agreement on a different version that was far less sweeping.¹⁰⁷ Rather than applying antitrust rules across the board to all of patent misuse, the final language related only to tying. In the case of tying, the language prohibited a finding of misuse unless the patent holder had market power.¹⁰⁸

Thus, following the 1988 Act, the law of patent misuse for issues other than tying stood as it had been before. In order to constitute misuse, a patent holder's behavior did not need to constitute an antitrust violation. Rather, analysis of patent holder behavior for the purposes of patent misuse had to be derived from patent policy.

II. THE FEDERAL CIRCUIT CASTS OUT IN A NEW DIRECTION

Over the next decade, the Federal Circuit adopted a test bearing only passing resemblance to the law as it stood after the 1988 Act. In particular, current Federal Circuit doctrine as a general rule requires application of the antitrust rule of reason in order to support a finding of patent misuse.¹⁰⁹

The Federal Circuit doctrine is at odds with legislative and judicial precedents. Worse yet, the doctrine is convoluted and difficult to follow. To understand the path that has taken the Federal Circuit to this result, it is helpful to separate out three types of questions and to identify how

107. For a detailed description of the path of House and Senate versions and the final compromise language, see Kenneth J. Burchfiel, *Patent Misuse and Antitrust Reform: "Blessed be the Tie?"*, 4 HARV. J.L. & TECH. 1, 2 n.9 (1991); see also Webb & Locke, *supra* note 106; Bennett, *Patent Misuse: Must an Alleged Infringer Prove an Antitrust Violation?*, 17 A.I.P.L.A. Q.J. 1 (1989).

108. The relevant language prohibits a finding of misuse upon "condition[ing] the license of any rights to the patent or the sale of the patented product on the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned." 35 U.S.C. § 271(d)(5) (2000).

The final bill also prohibits finding misuse for a complete refusal to license or use rights. This issue relates to suppression of an invention, and suppression is not the focus of the current article. For a discussion of the issue, see Kurt M. Saunders, *Patent Nonuse and the Role of Public Interest as a Deterrent to Technology Suppression*, 15 HARV. J.L. & TECH. 389 (2002); Seungwoo Son, *Selective Refusals to Sell Patented Goods: The Relationship Between Patent Rights and Antitrust Law*, 2002 ILL. J.L., TECH. & POL'Y 109; see also 35 U.S.C. § 271(d) ("No patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent . . .").

109. See *Virginia Panel Corp. v. Mac Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997) (citing antitrust cases and holding that if a practice has not been declared *per se* misuse or *per se* not misuse, the practice must be analyzed in accordance with the rule of reason); *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426-27 (Fed. Cir. 1997) (instructing the lower court on remand to evaluate the restriction under the rule of reason); *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992) (anti-competitive effects that are not *per se* violations of patent misuse law are reviewed in accordance with the rule of reason).

patent and antitrust law address each. Although the line between the questions is not absolute, the failure to navigate them carefully has contributed to the current doctrinal confusion in patent misuse.

The questions are: (1) what harm is the law trying to identify; (2) what type of test will be used to identify it; and (3) what elements will be considered under the test. For example, the courts may choose to apply a balancing test to determine whether patent misuse has occurred. That does not, however, resolve the question of whether courts should use the antitrust version of the balancing test. More importantly, it does not resolve the question of whether the factors weighed in the balancing test should be the same factors an antitrust test would consider.

A. ANTITRUST DOCTRINE

Antitrust doctrine provides the following answers to each of the three questions. At a most general level, antitrust law seeks to protect competition and prevent the improper use and creation of monopoly with its resultant anticompetitive effects in the marketplace.¹¹⁰

The basic antitrust test is a form of a balancing test known as the rule of reason. It is not a simple balancing test, in which the court weighs issues on both sides and arrives at a considered judgment of what is fair and equitable under the totality of the circumstances.¹¹¹ Rather, the antitrust rule of reason focuses on one particular issue: the impact on competition, rather than all possible equitable considerations. In addition, the test has formal thresholds and elements. The test looks for market power, anticompetitive effects and proof that the anticompetitive effects outweigh the pro-competitive benefits.¹¹² These thresholds and elements can be burdensome to establish.¹¹³ In fact, the test is so difficult to satisfy that Judge Posner, no fan of the restrictions of antitrust law, has been cited as

110. See, e.g., PHILIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW, ¶ 100a, at 3-4; see also 2 EARL W. KINTNER, FEDERAL ANTITRUST LAW § 11.1 (1980) (primary goal of Sherman Act § 2 monopolization rule is to prevent a firm or group of firms from acquiring or maintaining monopoly power through abusive or inequitable practices). These terms are subject to considerable ambiguity, although they have developed particular meaning in the context of antitrust law. See *id.*

111. See HOFFER, *supra* note 83, at 177-78.

112. See AREEDA & HOVENKAMP, *supra* note 110, at 345-46 (describing the rule of reason test).

113. The classic treatise on antitrust describes the rule of reason as requiring a series of steps. First, the plaintiff has the initial burden of showing that the behavior restrains competition in a specific market. Second, if the plaintiff meets this initial burden, the burden shifts to the defendant to show that its behavior serves legitimate objectives. Third, if the defendant meets that burden, the plaintiff may show that the defendant could meet its objective using less restrictive alternatives. And finally, the court must weigh the harms and benefits of the restraint with the plaintiff bearing the burden to show that the restraint is unreasonable on balance. See AREEDA & HOVENKAMP, *supra* note 110, ¶ 1502, at 345-46, 371-72 (2d ed. 2000).

saying that the rule of reason is essentially a “euphemism for nonliability [sic].”¹¹⁴

Given the burdensome nature of the rule of reason, courts have established a streamlined test when experience shows that the nature and effects of the behavior are so likely to be anticompetitive that it is unnecessary to examine the behavior in the particular circumstances of the case.¹¹⁵ The *per se* test for tying in antitrust law is really a hybrid of this approach and the rule of reason. Although it is a streamlined test, it still requires some examination of particular circumstances and effects.¹¹⁶

B. BLURRING THE LINES DURING THE 1988 ACT SENATE DEBATE

As described above, in the final language of the 1988 Act, Congress changed only the patent misuse law relating to tying. Moreover, Congress changed the law by borrowing an element from the antitrust balancing test. In particular, Congress mandated that there can be no finding of misuse without market power.

Borrowing an element from the antitrust balancing test is not the same as mandating the use of the entire antitrust test. In statements presented at the time that the final language was introduced, however, Senator DeConcini attempted to broaden the meaning of the language.

Senator DeConcini argued that “[w]hile not mandating an antitrust test, the legislation nonetheless imposes a rule-of-reason-type analysis before a tie-in can be held to constitute misuse—and not just a general reasonable analysis, but one with a particular set of elements in mind.”¹¹⁷ Thus, rather than simply adding a market power requirement, Senator DeConcini argued that the final language replaces both the type of test to be applied and all of the elements to be considered. Specifically, the DeConcini approach replaces the “reasonable” analysis of a general eq-

114. Richard A. Posner, *The Rule of Reason and the Economic Approach: Reflection on the Sylvania Decision*, 45 U. CHI. L. REV. 1, 14 (1977); Hearings on H.R. 557, *supra* note 100, at 129 (quoting the Posner language).

115. See *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 692 (1978); *Northwest Wholesale Stationers, Inc. v. Pac. Stationary & Printing Co.*, 472, U.S. 284, 298 (1985).

116. See *supra* note 68 (describing the antitrust test for tying).

117. 134 CONG. REC. S17,147 (1988).

uitable inquiry with the type of balancing test applied in antitrust law plus all of the elements of the antitrust test.¹¹⁸

Senator Leahy, who had authored the language that the Senate originally approved, also tried to soften the impact of Congress's failure to pass his earlier language:

While this approach is indeed different from our original patent misuse proposal, it does not mean that Congress has rejected the earlier Senate proposal and now believes that the traditional misuse doctrine should be retained intact in the many other areas in which it may be applied by the courts. It only means that, because of the short time available at the end of this Congress, the House and Senate Committees interested in these issues were able to agree on a narrower reform.¹¹⁹

It is questionable whether the Supreme Court would find such a strained interpretation of the language and precedent to be binding. As the Supreme Court noted in *INS v. Cardoza-Fonseca*, "Few principles of statutory construction are more compelling than the proposition that Congress does not intend *sub silentio* to enact statutory language that it has earlier discarded in favor of other language."¹²⁰

118. In theory, one could argue that the language of the act leaves open the possibility of adding other requirements for patent misuse. The argument would be that the Act merely requires a finding of market power for a misuse case involving tying; it does not say that market power is the sole element that can be required for a misuse case involving tying, and other elements could be added later by Congress or the Courts. Even if this were true, the language cannot be read as mandating specific elements.

One could also argue that the DeConcini interpretation would impose an even stricter test than was rejected by failure to pass the earlier Senate language. The original Senate language would have required that the behavior violate the antitrust laws. For tying to violate the antitrust laws, requires only a modified *per se* analysis, not a full blown rule of reason approach. Thus, Senator DeConcini's suggestion of a rule of reason analysis would impose a patent misuse test for tying that is *tougher* to meet than the antitrust test for tying.

The DeConcini language may be best understood as a struggle over whether to apply *per se* rather than rule of reason analysis to tying, both for patent and antitrust. Regardless of the underlying struggle, however, Senator DeConcini acknowledges clearly that the final language concerns only tying rather than patent misuse across the board.

119. 134 CONG. REC. S17,147-48 (1988).

120. *INS v. Cardoza-Fonseca*, 480 U.S. 421, 442-43 (1987) (quoting *Nachman Corp. v. Pension Benefit Guar. Corp.*, 446 U.S. 359, 392-93 (1980) (Stewart, J., dissenting)); see also *id.* at 452-53 (Scalia, J., concurring) (arguing that judges "interpret laws rather than reconstruct legislators' intentions. Where the language of those laws is clear, we are not free to replace it with an unenacted legislative intent."); *United States v. Lanier*, 520 U.S. 259, 267 n.6 (1997) (noting that the legislative intent of Congress is to be derived from the language and structure of the statute itself, if possible, not from the assertions of codifiers directly at odds with clear statutory language); cf. *Grid Sys. Corp. v. Texas Instruments, Inc.*, 771 F. Supp. 1033, 1037 n.2 (N.D. Cal. 1991) (declining the invitation to use the legislative history of the 1988 Act language to find that the Act altered antitrust law and noting that although some legislators did favor such an exception, a full reading of the record reveals that Congress rejected the extension despite this articulate support). But see *In re Recombinant DNA*, 850 F. Supp. 769, 777 (S.D. Ind. 1994) (referring to the Leahy remarks in interpreting the 1988 Act to cover both "tie-ins"

C. BLURRING THE LINES IN THE FEDERAL CIRCUIT

Following the 1988 Act, if a patent holder engages in tying behavior, there can be no finding of misuse without a finding that the patent holder has market power. The law for other forms of patent misuse, however, remains unchanged.¹²¹ Thus, under Supreme Court doctrine, in order to constitute misuse, a patent holder's behavior need not constitute an anti-trust violation. Rather, analysis of patent holder behavior for the purposes of patent misuse must be derived from patent policy.

In the 1992 *Mallinckrodt v. Medipart* case, however, the Federal Circuit altered the law by requiring a full-blown antitrust analysis in a patent misuse case that did not relate to tying.¹²² In this opinion, the court not only required more than market power but added this requirement to patent misuse across the board.¹²³

The *Mallinckrodt* opinion cited *Windsurfing* as the relevant precedent for patent misuse.¹²⁴ The opinion showed no awareness of Judge Markey's subsequent retreat from *Windsurfing* in *Senza-Gel*, in which he acknowledged that the Federal Circuit did not have the authority to require an antitrust analysis without Congressional or Supreme Court action. Nor did the opinion show any awareness of Congress' failure to pass the Senate proposal which would have required an antitrust analysis. The fact that Congress failed to approve requiring an antitrust analysis left the Federal Circuit still lacking the authority to alter the doctrine in this way, yet that is precisely what the court did in *Mallinckrodt*.

The *Windsurfing* test essentially followed the test for antitrust violations. As described above, antitrust seeks to protect competition and prevent anticompetitive effects in the marketplace.¹²⁵ One can prove such harms in antitrust either by showing that the behavior has been declared a *per se* violation or that the behavior fails the rule of reason.¹²⁶ Under the rule of reason, a court will look for market power, anticompetitive

and "tie-outs" and noting that Congress would not have fashioned a "rule-of-reason type" approach for one form of tying arrangement and excluded from that approach another intimately related tying situation, especially in light of its clear purpose of permitting a misuse defense only when the patentee has acted anticompetitive); *Texas Instruments Inc. v. Hyundai Elecs. Indus., Co.*, 49 F. Supp. 2d 893, 907-19 (E.D. Tex. 1999) (following other portions of the Leahy language to support a full Rule of Reason analysis for patent misuse in tying).

121. As noted before, the 1988 Act also codified a patent holder's right to suppress the invention. See *supra* note 108.

122. 976 F.2d 700, 708-09 (Fed. Cir. 1992).

123. *Id.*

124. *Id.* at 706.

125. See *supra* Part II.A.

126. See *supra* Part II.A.

effects and proof that the anticompetitive effects outweigh the pro-competitive benefits.¹²⁷

Under *Windsurfing*, patent misuse “requires that the alleged infringer show that the patentee has impermissibly broadened the ‘physical or temporal scope’ of the patent grant with anticompetitive effect.”¹²⁸ To sustain a misuse defense, a party must show that the behavior has been held to be *per se* anticompetitive by the Supreme Court or demonstrate that “the overall effect of the license tends to restrain competition unlawfully in an appropriately defined relevant market.”¹²⁹ In applying the balancing test, the court noted with approval the pro-competitive effects related to the behavior.¹³⁰

In sum, the harm that patent misuse is testing for became focused on improper “anticompetitive effects.” One could prove such effects either by reference to behaviors declared *per se* prohibited or by a balancing test that looks for market power, and anticompetitive effects evaluated on balance against pro-competitive effects.

Thus, the *Windsurfing* court drafted a test in which a claim of patent misuse would be tested by an antitrust inquiry.¹³¹ *Mallinckrodt* adopted this test, amplifying it slightly by focusing on the familiar notion of behavior falling inside or outside the patent grant. According to *Mallinckrodt*, the question of whether a patent holder’s behavior falls outside the scope of the patent turns on anticompetitive effects, which are measured by the antitrust rule of reason.¹³²

Federal Circuit cases after *Mallinckrodt* showed greater loyalty to the history of patent misuse as a doctrine separate from antitrust that does not require a violation of the antitrust laws. For example, the *Vir-*

127. See *supra* Part II.A.

128. *Windsurfing Int’l, Inc. v. AMF Int’l, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986).

129. *Id.* at 1002.

130. *Id.*

131. Although the current Federal Circuit test appears to leave the relaxed standing requirement in place, in theory, the standing requirement of patent misuse could be harmonized with antitrust as well. The Senate language, which would have prohibited a finding of patent misuse unless the patent holder’s “practices or actions or inactions . . . violate the antitrust laws” could be read to harmonize the standing requirements as well as the substantive requirements. Webb & Locke, *supra* note 106, at 264 (quoting S. 438 § 201).

132. The *Mallinckrodt* opinion states: “The appropriate criterion is whether Mallinckrodt’s restriction is reasonably within the patent grant, or whether the patentee has ventured beyond the patent grant and into behavior having an anticompetitive effect not justifiable under the rule of reason.” *Mallinckrodt*, 976 F.2d at 708. In addition, the court stresses the dichotomy between inside and outside the patent grant, again implying that the difference rests on whether there are anticompetitive effects: “Should the restriction be found to be reasonably within the patent grant . . . that ends the inquiry. However, should such inquiry lead to the conclusion that there are anticompetitive effects extending beyond the patentee’s statutory right to exclude . . . [the court will apply] the rule of reason.” *Id.*

ginia Panel opinion noted that “violation of the antitrust laws . . . requires more exacting proof than suffices to demonstrate patent misuse.”¹³³ In addition, the *C.R. Bard* opinion noted the following: “Patent misuse is viewed as a broader wrong than antitrust violation because of the economic power that may be derived from the patentee’s right to exclude. Thus, misuse may arise when the conditions of antitrust violation are not met.”¹³⁴ Despite the declarations that patent misuse does not require a violation of the antitrust laws, the opinions nevertheless proceed to apply the test that determines whether an antitrust violation has occurred.¹³⁵

Federal Circuit cases after *Mallinckrodt* also expanded the explanation of the misuse test to include references to other misuse precedents. Precedents that did not conform to the rule of reason inquiry were described as examples of behaviors that are *per se* misuse or *per se* not misuse.¹³⁶ Later Federal Circuit cases also referred to the language of the 1988 Act and the *Brulotte* reasonableness inquiry.¹³⁷ None of the cases,

133. *Virginia Panel Corp. v. Mac Panel Co.*, 133 F.3d 860, 872 (Fed. Cir. 1997); cf. *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1426 (Fed. Cir. 1997) (patent misuse is a separate method of limiting abuse of patent rights separate from the antitrust laws).

134. *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1372 (Fed. Cir. 1998) (opinion written by judge Newman, who also wrote the *Mallinckrodt* opinion).

135. One could argue that, despite the essential application of an antitrust test, the *Mallinckrodt* court still offers a hint that it might not intend to apply antitrust law. In the background section, the opinion notes that “[t]he concept of patent misuse arose to restrain practices that did not in themselves violate any law . . .” *Mallinckrodt*, 976 F.2d at 704. In theory, if the sentence says patent misuse is aimed at practices that do not violate any laws, perhaps the test for patent misuse should require something less than what is required for a violation of the antitrust laws. The remainder of the opinion, however, directly applies *Windsurfing* which replaces patent misuse with an antitrust test. Thus, either the *Mallinckrodt* court misunderstood that *Windsurfing* overturned prior precedent in the area or the background sentence is merely a historic reference, too vague to mean much of anything.

136. See *B. Braun Med.*, 124 F.3d at 1426 (describing misuse precedents); *Virginia Panel*, 133 F.3d at 869 (describing *per se* and rule of reason structure for patent misuse inquiry).

137. See *supra* text accompanying notes 69–71; *B. Braun Med.*, 124 F.3d at 1426 (referencing § 271(d)(5) of the Patent Act which embodies the 1988 Act amendments related to tying); *Virginia Panel*, 133 F.3d at 869 (Fed. Cir. 1997) (referencing § 271(d)(5) as well as *Brulotte*).

Two of the Federal Circuit misuse cases following *Mallinckrodt* do include citations to *Senza-Gel*, but in reference to issues unrelated to the court’s retreat from the position that the misuse inquiry should be replaced with an antitrust inquiry. See, e.g., *C.R. Bard*, 157 F.3d at 1372 (*Senza-Gel* cited for the proposition that patent misuse renders a patent unenforceable). In order to constitute misuse, a patent holder’s behavior need not constitute an antitrust violation. Rather, analysis of patent holder behavior for the purposes of patent misuse must be derived from patent policy. *B. Braun Med.*, 124 F.3d at 1427, 1428 n.5 (cited *Senza-Gel* for two propositions: (1) that patent misuse is an equitable doctrine in which the court refuses to help support the rights of a party with unclean hands; and (2) that actions that support a misuse finding may also provide an element in a claim for affirmative actions under an antitrust or breach of contract theory).

One could argue that the Federal Circuit approach follows the approach outlined in the statement by Senator DeConcini. Both tests mimic the form and substance of the antitrust laws. Even if one accepts the questionable proposition that the DeConcini statement is good authority, however, it

however, showed any awareness that *Windsurfing* represented a departure from prior precedent, that the court retreated from the position in *Senza-Gel*, or that the Senate failed to pass a proposal similar to *Windsurfing* in the shuffle leading up to the 1988 Act.

In later Federal Circuit cases, the test laid out in *Windsurfing* and adopted in *Mallinckrodt* becomes clouded and difficult to follow. This may reflect an attempt to apply antitrust in patent misuse cases with due deference to precedents not described in *Mallinckrodt*. It may also reflect a lack of clarity in applying antitrust law.

For example, as described above, the harm to be tested for under *Windsurfing* focuses on improper “anticompetitive effects.” One can prove such effects either by (1) behaviors declared *per se* prohibited or (2) applying the rule of reason, a test that looks for market power, anticompetitive effects, and finally, a balancing of anticompetitive effects against pro-competitive effects.¹³⁸

At times, Federal Circuit opinions use the term “rule of reason” properly to describe the full test that is applied in lieu of a *per se* test.¹³⁹ At other times, however, the court uses the term “rule of reason” to refer only to the portion of the test that considers whether the anticompetitive effects are outweighed by pro-competitive benefits.¹⁴⁰ This confusion

is not good authority for the path taken by the Federal Circuit. The DeConcini statement refers only to the test for tying. It does not establish a general test for misuse, as the Federal Circuit does. In addition, one would also have to accept the sleight of hand that the Federal Circuit has not cited or explored the Leahy or DeConcini statements as potential authority.

138. See *supra* text accompanying notes 124–27.

139. For example, at one point, the court in *B. Braun* describes patent misuse as either identifying behavior that falls within *per se* prohibitions or applying the rule of reason. Although the language is unclear, it essentially follows the *per se*/rule of reason split applied in antitrust:

Two common examples of such impermissible broadening are using a patent which enjoys market power in the relevant market to restrain competition in an unpatented product or employing the patent beyond its 17-year term. In contrast, field of use restrictions . . . are generally upheld and any anticompetitive effects they may cause are reviewed in accordance with the rule of reason.

124 F.3d at 1426 (citations omitted). Although classic *per se* tests generally exclude market power inquiries, the fact that the court includes tying plus market power as one of the *per se* categories is consistent with the way that antitrust law handles tying. See *supra* note 68.

140. For example, the *Virginia Panel* court describes the misuse test for circumstances outside the realm of *per se* as a multi-part test in which a court must first determine if the practice is reasonably within the patent grant. If not, and if it extends beyond the grant with anticompetitive effect, then the court will apply the “rule of reason.” 133 F.3d at 869. Thus, the court describes the rule of reason as entering after a finding that there are anticompetitive effects, even though a finding of anticompetitive effects is part of the rule of reason itself.

Mallinckrodt uses a similar formulation to describe the test for those behaviors that are not *per se* patent misuse:

Should the restriction be found to be reasonably within the patent grant . . . that ends the inquiry. However, should such inquiry lead to the conclusion that there are anticompetitive effects extending beyond the patentee’s statutory right to exclude, these effects do not

makes it difficult to determine what the Federal Circuit test is and how it should be applied.¹⁴¹

In addition, Federal Circuit language at times suggests that the Court will apply a two-part test in which it would first determine whether the behavior violates patent policy and then determine whether the behavior violates antitrust.¹⁴² In other words, rather than replacing the patent inquiry with the more familiar antitrust-style inquiry, the two-part test would require both inquiries. A defendant would have to show a patent violation *and* an antitrust violation.

automatically impeach the restriction. Anticompetitive effects that are not *per se* violations of law are reviewed in accordance with the rule of reason.

976 F.2d at 708. Once again, the court has already applied parts of the rule of reason test before the point at which it would begin applying the test.

In addition, the *Mallinckrodt* language cited above suggests an odd formulation of *per se* rules on the whole. It suggests that one asks first whether there are anticompetitive effects and then categorizes some of those effects as *per se* prohibited. Although the *per se* rule in tying does include some consideration of effects, the more general approach for a *per se* rule eschews any consideration of effects and declares some behavior so likely to cause harm that it is prohibited without an inquiry into details such as the effects in the particular case. See *supra* note 68.

141. It is also possible to argue that the Federal Circuit test is not a confusion of antitrust law. Rather, the Federal Circuit judges simply do not intend to apply antitrust law and have invented their own doctrinal forms. If that is the case, it is a strange doctrine indeed, given that it uses the language and concepts of antitrust law, citing antitrust cases for support. See, e.g., *Virginia Panel*, 133 F.3d at 869 (describing the rule of reason test to be applied in patent misuse by quoting antitrust cases). Moreover, it fails to follow patent doctrine.

142. For example, the *Virginia Panel* court describes the misuse test in the following manner:

When a practice alleged to constitute patent misuse is neither *per se* patent misuse nor specifically excluded from a misuse analysis . . . a court must determine if that practice is "reasonably within the patent grant If so, the practice does not have the effect of broadening the scope of the patent claims and thus cannot constitute patent misuse. If, on the other hand, the practice has the effect of extending the patentee's statutory rights and does so with an anti-competitive effect, that practice must then be analyzed in accordance with the "rule of reason." Under the rule of reason, "the finder of fact must decide whether the questioned practice imposes an unreasonable restraint on competition, taking into account a variety of factors, including specific information about the relevant business, its condition before and after the restraint was imposed, and the restraint's history, nature, and effect."

Id. at 869 (citations omitted). See also *Mallinckrodt*, 976 F.2d at 708 (using a similar formulation). Thus, the test could be read as first applying a *Radio 1* style reasonableness inquiry in which the court asks whether the restraint is unreasonable under patent principles, and then an antitrust inquiry, which focuses on anticompetitive effects under the rule of reason.

The language may be no more than an imperfect articulation of *Windsurfing* or an attempt to make *Windsurfing* fit within the notion that patent law tests for something different from antitrust. It may, therefore, suggest some of the difficulties of applying *Windsurfing* without a clear mandate to adopt antitrust law.

Nevertheless, one district court case has applied the current Federal Circuit rule in a way that suggests a two-step rule requiring first a *Radio 1* style inquiry into whether the behavior extends the patent grant and then either a *per se* or a rule of reason analysis. See *Bayer AG v. Housey Pharms., Inc.*, 228 F. Supp. 2d 467 (D. Del. 2002). Under a two-step rule, a behavior still could not constitute patent misuse unless it violated the antitrust rule of reason unless it falls within one of the precedential *per se* categories.

Finally, the doctrinal confusion is worsened by intermingling the word "reasonable," as in a general balancing test like the one suggested in *Radio I*, with the term "rule of reason," which describes a structured test in which there are specific elements to apply and those elements track antitrust theory.¹⁴³

An additional danger of the doctrinal confusion in patent misuse is that it may bleed over into antitrust law as courts and commentators cite patent misuse cases for a description of what the rule of reason is or what an inquiry into anticompetitive effect should look like. Thus, if the Federal Circuit is going to apply what is essentially antitrust law, it would be better to ensure that it is applied clearly and properly, even if the approach is cut back to applying antitrust only in the tying arena.¹⁴⁴

In sum, the journey to the current Federal Circuit doctrine can be understood in the following fashion: The Federal Circuit in *Windsurfing* tried to change patent misuse doctrine so that it tracks antitrust doctrine. It then retreated from this approach in *Senza-Gel*. Similarly, Congress considered changing patent misuse so that it tracked antitrust doctrine to require finding an antitrust violation. Congress failed to approve this approach, however, adopting a provision relating to tying and mandating only market power. Four years later, the Federal Circuit, ignoring or perhaps missing the implication of the intervening precedents, cited and tried to adopt the *Windsurfing* test. Later Federal Circuit cases have tried

143. See, e.g., *Mallinckrodt and Virginia Panel* language quoted in note 142. In addition, the *C.R. Bard* court explains that the patent holder's competitive activities would constitute patent misuse if there were evidence that they "were either per se patent misuse or that they were not 'reasonably within the patent grant.'" See 157 F.3d at 1373 (quoting *Mallinckrodt*, 976 F.2d at 708). The court never uses the term "rule of reason" at all, but it would be hard to imagine that the author of *Mallinckrodt* would have completely abandoned that standard without any reference to the Federal Circuit cases that have relied on it. More likely, the *C.R. Bard* language is intended to suggest a dichotomy between a *per se* approach and a rule of reason approach but ends up using the language of open balancing rather than the language of the structured rule of reason test.

144. In addition, some commentators have expressed concern that the Federal Circuit may be exercising too much influence in the antitrust realm without sufficient leavening effect from the viewpoints of other circuits. In particular, under Federal Circuit law, the Court has jurisdiction to hear appeals from cases that included final resolution of at least one patent claim at the trial court level, even if no patent issues remain on appeal. Until recently, the Federal Circuit then applied regional circuit law to non-patent claims. The Federal Circuit, however, has changed this approach such that it now applies its own law to non-patent claims, which would include antitrust claims. See Ronald S. Katz & Adam J. Safer, *Should One Patent Court Be Making Antitrust Law for the Whole Country?*, 69 ANTITRUST L.J. 687, 687-88 (describing and criticizing the expansion of the Federal Circuit's reach); Robert Pitofsky, *Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property*, 68 ANTITRUST L.J. 913, 919 (2001) (article by former Chairman of the Federal Trade Commission expressing concern that recent Federal Circuit cases have upset the traditional balance between antitrust and intellectual property with disturbing implications for the future of antitrust in technology industries); Boyle et al., *supra* note 15, at 739 (noting that the Federal Circuit has taken on a "new and controversial role").

to conform the new Circuit doctrine to the intervening precedents. The result is a confusing tangle that distorts both antitrust and misuse doctrine.

III. SHOULD PATENT MISUSE REQUIRE A VIOLATION OF THE ANTITRUST LAWS?

The confusion in the Federal Circuit's doctrine could be greatly clarified by simply giving courts a mandate to require an antitrust violation in testing for patent misuse. This would defy both legislative and judicial precedent—not just the retreat in *Senza-Gel* and the rejected senate proposal, but also the early doctrinal and theoretical history of patent misuse. The question remains, however, whether the precedents are wrong and the courts should be given a clear mandate to apply an antitrust test in all circumstances. As described above, a number of respected scholars and legislators have advocated this approach, particularly during the debate surrounding the 1988 Amendments to the Patent Act.¹⁴⁵

In order for antitrust rules to provide a sufficient test for patent misuse, however, antitrust law must be focused on the same types of harm as patent misuse, and the antitrust rules must be capable of intercepting the same types of behavior that would create concern under patent policy.¹⁴⁶ Antitrust tests, however, are aimed only at identifying particular types of harm. They cannot address the full range of patent policy concerns.

The primary purpose of the patent system is to promote invention. This policy goal is embedded in the original Constitutional language, which provides for legislation “[t]o promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”¹⁴⁷ Thus, the Constitution does not simply authorize the power to grant patents, it authorizes that power for the specific purpose of promoting the progress of science.

The Supreme Court has emphasized patent law's primary goal of promoting the public interest through the advancement of science. In 1945, for example, the Court noted the following: “The primary purpose

145. See *supra* text accompanying notes 100–01 (describing the history of the amendments and summarizing the debates).

146. This article is not intended to examine the arguments presented during the debates. Rather, the article focuses on a different issue and is intended to challenge an assumption implicit in any argument that antitrust rules can provide a sufficient test for patent misuse: that antitrust law is designed to identify the same type of harm as patent misuse. For highlights of the arguments on both sides of the debates leading up to the 1988 Amendments, see *supra* text accompanying notes 100–01 and sources cited *supra* note 100.

147. See U.S. CONST. art. I, § 8, cl. 8.

of our patent system is not reward of the individual but the advancement of the arts and sciences. Its inducement is directed to disclosure of advances in knowledge which will be beneficial to society; it is not a certificate of merit, but an incentive to disclosure."¹⁴⁸ Thus, a patent is offered only as part of a system intended to improve social welfare by inducing inventions whose creation and disclosure will benefit society.¹⁴⁹

As part of the essential trade-off of patent law, an inventor receives patent rights that are limited in time and scope in exchange for fully disclosing the invention in a way that would teach one of ordinary skill in the art how to practice the invention.¹⁵⁰ When the time of the patent has expired, the invention should be dedicated to the public domain.¹⁵¹

Although in American legal history, the notion of granting limited patent rights to induce invention can be traced back to the Madison/Jefferson debates and beyond,¹⁵² modern economic theory explains the need for patent rights and for limits on those rights. According to modern economic theory, the intangible information embodied in any invention has characteristics of a public good.¹⁵³ In other words, the in-

148. See *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 330-31 (1945). In a similar vein, the Supreme Court noted the following in a landmark copyright case: "The copyright law, like the patent statutes, makes reward to the owner a secondary consideration The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that it is the best way to advance public welfare" *Mazer v. Stein*, 347 U.S. 201 (1954).

149. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989) ("The ultimate goal of the patent system is to bring new designs and technologies into the public domain through disclosure.").

150. 35 U.S.C. § 112 (2003) ("The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.").

151. See, e.g., *Kellogg Co. v. Nat'l Biscuit Co.*, 305 U.S. 111, 120 (1938) (citing *Singer Mfg. Co. v. June Mfg. Co.* for the proposition that on the expiration of a patent the monopoly granted by it ceases to exist, and the right to make the thing formerly covered by the patent becomes public property. It is upon this condition that the patent is granted).

152. For a history of the development of the American Constitutional language, see Tyler Ochoa & Mark Rose, *The Anti-Monopoly Origins of the Patent and Copyright Clause*, 49 J. COPYRIGHT SOC. 675, 685-95 (2002).

153. See William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989) (landmark article identifying "[a] distinguishing characteristic of intellectual property as its 'public good' aspect"); Paul Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. STAT. 387, 387 (using the term "collective consumption goods" rather than "public consumption goods"); see also Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1 (2003) (explaining that the intangible information component of an invention is characterized by nonrivalrous consumption such that one person's consumption does not reduce another's).

formation can be used by many people without being depleted, and it can be difficult to collect full payment from everyone who uses it.¹⁵⁴

A classic example of a public good is a lighthouse. With a lighthouse, many can use the light without depleting it. In addition, given the difficulty of allowing only some passing ships to use the benefit of the light, one cannot easily enforce a rule that only those who have paid for the light may use it.¹⁵⁵

In the context of the intangible information embodied in an invention, the public goods problem manifests itself in the following manner. Although developing information may require considerable investment, once developed, information can be easily copied by others and inventors may be unable to fully recoup their investments.¹⁵⁶ As a result, market mechanisms provide inadequate incentives to invest in invention.¹⁵⁷ Given that society benefits from invention, we create patent rights because market mechanisms are insufficient to provide the maximum level.

The patent system itself, however, can create economic effects that are detrimental to social welfare. For example, the patent system is intended to encourage the creation of inventions so that society may use them. Nevertheless, allowing patent holders to recoup their investments by excluding potential competitors and charging higher prices ensures that some users who would purchase the information only at lower prices will be turned away empty handed. Thus, patent rights result in underutilization of the information that the system creates incentive to produce.¹⁵⁸

The problem of increased prices and the resultant underutilization of the resources is a concern that patent and antitrust share.¹⁵⁹ It is not, however, the only negative economic effect of the patent system. For example, consider the circumstance in which patent owners choose not to license or market their inventions at all or have no success in marketing them. Under those circumstances, the patent grant has no classic price effect on a market because the patent holder is not extracting anything

154. See Kenneth J. Arrow, *Economic Welfare & the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609, 614–16 (Nat'l Bureau of Econ. Research ed., 1962).

155. See, e.g., R. H. COASE, *THE FIRM, THE MARKET, AND THE LAW* 187–214 (1988) (describing the classic lighthouse example and disputing the implication that public funding is necessary).

156. See, e.g., Landes & Posner, *supra* note 153.

157. See, e.g., F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 444 (explaining that if pure and perfect competition prevailed incentives for invention and invention would be fatally defective without a patent system or some equivalent).

158. See Arrow, *supra* note 154, at 617 (noting that in a free enterprise economy, patent rights produce underutilization of information precisely to the extent that they succeed in supporting the creation of that information).

159. See *infra* text accompanying note 171 (noting antitrust doctrine's focus on preventing behavior that can raise prices and restrict output).

from any market. Nevertheless, the existence of the patent may still cause economic harm by increasing the costs of administering the system¹⁶⁰ and the search costs for those who wish to avoid the possibility of infringement.

More importantly, patents encourage activity that is economically wasteful or duplicative. For example, the patent system encourages duplicative activity as parties try to invent around patents held by others rather than simply building on that work.¹⁶¹ This duplicative activity will occur regardless of whether the patent holder chooses to exercise its patent rights in any way. As one scholar has noted, "[l]ive patents may obstruct inventive or innovative activity long after their owners have decided not to use the inventions covered."¹⁶²

In addition, the patent system encourages defensive research activity, in which a patent holder tries to anticipate all possible alternative solutions to the problem solved by the patent, even inferior solutions. The patent holder then tries to patent the alternatives to block competitors'

160. As a general matter, all costs of administering the patent system must be factored into any calculation of the costs and benefits of patent rights.

161. See Machlup, *supra* note 13, at 50–51; RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 38–39 (4th ed. 1992); PHILLIP AREEDA & LOUIS KAPLOW, *ANTITRUST ANALYSIS: PROBLEMS, TEXT, CASES* 151 (5th ed. 1997) ("The [patent system] may induce 'wasteful' research. Rivals of the patentee may have to invent around the patent. While useful discoveries sometimes result, inventing around does not always seek better technology and may only produce an equivalent or inferior alternative to overcome the roadblock posed by the initial patent."); Kaplow, *supra* note 3, at 1869 (noting that because inventing around does not contribute to welfare when combinations are permitted, the resources devoted to the task are entirely wasted); Donald F. Turner, *The Patent System and Competitive Policy*, 44 N.Y.U. L. REV. 450, 455 (1969) (noting that "the patent system often leads competitors of patent holders to invest resources in duplicating research to find noninfringing ways of obtaining the same or nearly same result," using resources that in many instances "could be put to better use in attacking problems as yet unsolved").

Some commentators suggest that economic loss from duplicative activity must be balanced against any gain from accidental discovery that may occur in the process of inventing around another's patent. Machlup describes this theory but also queries whether it is "easier to find the important by seeking the unimportant." See Machlup, *supra* note 13, at 52.

The problem of duplicative activity may be enhanced by other design elements of U.S. patent law, such as combining a winner-takes-all system with a system that grants a reward only after the invention has been sufficiently developed and reduced to practice. Given that parties know of the patent system and have an incentive to race to the patent goal, granting the patent later in the process increases the economic waste that occurs when the one who loses the race ends up with nothing to show for the effort. Cf. Steve Calandrillo, *An Economic Analysis of Intellectual Property Rights*, 9 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 301 (1998) (arguing that rewards earlier in the development process would minimize the loss from duplicative efforts in the race to patent by reducing the wasted effort of the loser); Machlup, *supra* note 13, at 51 (noting the economic waste when the entity that loses the patent race is barred from using its own invention).

162. Machlup, *supra* note 13, at 10.

efforts to invent around the patent.¹⁶³ Such defensive research produces limited social benefit if the solution is no better than the original invention.¹⁶⁴

Moreover, some scholars have questioned whether the rewards offered by the patent system distort the deployment of talent and economic activity towards research and, more specifically, toward research that is likely to yield patentable results.¹⁶⁵ Distorted allocations are unlikely to reflect the most natural and efficient flow of resources.

In addition to the problems of waste and duplication, the patent system may actually hinder invention, the very process it is intended to foster. The process of invention is often evolutionary, as one invention builds on inventions that have gone before. Granting a patent, therefore, may have the perverse effect of reducing the next generation of inventions because it reduces incentives and creates stumbling blocks for those who would participate in the hunt for the next stages.¹⁶⁶ This is particularly a problem for inventions that form the foundation of an entirely new area of science or technology. Granting broad rights to those who contribute to the early stages of invention can hinder the development of later stages. In addition, delaying the point at which inventions enter the public domain reduces the benefits society may gain in terms of a foundation for future innovation.¹⁶⁷

163. Machlup notes the following:

Although devised to solve an important incentive problem, the patent system is a crude and imperfect instrument The [patent] protection provided is often weak because there can be many viable solutions to a technical problem, so other firms can "invent around" a given patented solution. . . . To be sure, companies often seek to fence in their technological domain by patenting every conceivable variation on a product or process.

Machlup, *supra* note 13, at 50–51; see F.M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 624 (3d ed. 1990).

164. See Kaplow, *supra* note 1, at 1869 (noting in the context of patent settlement that defensive research produces "no social benefit if the new invention is no better than the first").

165. See Machlup, *supra* note 13, at 51–52; see also FRED WARSHOFSKY, *THE PATENT WARS: THE BATTLE TO OWN THE WORLD'S TECHNOLOGY* 246 (1994) (bemoaning the large amounts of time and energy that talented R&D staff must divert to the task of assisting patent attorneys in filling the "patentability gap," rather than devising new products or new and more efficient processes for their manufacture).

166. For a general explication of the economics of the problem, see Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29 (1991). For applications of this concept to particular types of invention, see Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329 (1987); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989 (1997); cf. Peter S. Menell, *An Analysis of the Scope of Copyright Protection for Application Programs*, 41 STAN. L. REV. 1045 (1989).

167. This is in addition to the reduction of benefits to society from delaying the time at which the public can use the invention already created without reward to the inventor.

In short, although patents are designed to promote the public interest through the advancement of science, the patent system creates negative effects as well. These include the anticompetitive effects of increased prices and reduced supply. They also include effects separate from anticompetitive effects, such as encouraging wasteful and duplicative activities and creating disincentives to future inventors.

Limiting the time and scope of the patent grant serves to limit the detrimental effects of the patent system.¹⁶⁸ Thus, any test to determine whether a behavior improperly extends these limits must be designed to reflect the concerns embodied in these limits. Antitrust rules are unlikely to detect many of the types of concerns embodied in limiting the patent grant.

Consider a streamlined version of the *Windsurfing* test, one that would clearly test patent misuse by conventional antitrust principles. Such a test might define patent misuse as broadening the physical or temporal scope of the patent with effects that are, on balance, anticompetitive.¹⁶⁹ This can be proven by applying the rule of reason, which looks for market power, anticompetitive effects, and a balancing of such anticompetitive effects against any pro-competitive effects.¹⁷⁰

In a rule of reason inquiry under antitrust principles, a firm must have market power in order to create anticompetitive effects. Without

168. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 43 (5th ed. 1998) (explaining that the length of a patent is limited to minimize the duplicative activity that would otherwise result from the patent system).

169. Note that I have shifted the emphasis in the *Windsurfing* language by changing the test from "broaden[ing] the 'physical or temporal' scope . . . with anticompetitive effect" to "broadening the physical or temporal scope . . . with effects that are, on balance, anticompetitive." Compare *Windsurfing Int'l, Inc. v. AMF Int'l, Inc.*, 782 F.2d 995, 1001 (Fed. Cir. 1986), with text accompanying this note. Under an antitrust test, one would not forbid *any* anticompetitive effects but only those that are on balance anticompetitive when weighed against pro-competitive effects. See *supra* note 113. Thus, the formulation above would conform more precisely to an antitrust inquiry. In addition, although *Windsurfing*, *Mallinckrodt*, and the later Federal Circuit cases describe the overview of the test as if any anticompetitive effects would suffice, more expansive descriptions later in these opinions suggest that the courts actually are looking for anticompetitive effects on balance. See *Windsurfing*, 782 F.2d at 1001-02 (assertion of trademark rights can have pro-competitive effects and thus would rarely form the basis of patent misuse); see also *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700, 708 (Fed. Cir. 1992) (anticompetitive effects do not automatically impeach the restriction but are reviewed under the rule of reason); *Virginia Panel Corp. v. Mac Panel Co.*, 133 F.3d 860, 869 (Fed. Cir. 1997) (if practice extends rights and does so with anticompetitive effects, it must be tested under the rule of reason).

170. The hypothetical test is intended to completely free the Federal Circuit and other courts from the bounds of the prior case law precedents. Thus, the test would eliminate the need to designate prior cases as *per se* precedents. Going forward, all cases would be tested according to the antitrust rule of reason. Although the courts could in theory develop sufficient experience with a particular type of behavior to designate that behavior as *per se* misuse, the designation would be based on the notion that the behavior is so likely to meet the rule of reason test that it is unnecessary to engage in the full inquiry. See *supra* text accompanying note 96 (describing the classic *per se* test in antitrust).

market power, a firm cannot raise prices and restrict output, thereby causing the type of anticompetitive effects that antitrust law cares about.¹⁷¹

A patent holder theoretically has power over the market represented by those who might be interested in the patented invention. A patent grant, however, is no guarantee that anyone will be interested in the invention or that a patent holder will be successful in capturing that interest. In fact, eighty percent to ninety percent of patents never create any monetary return for the patent holder.¹⁷² More importantly, the patented invention may be only one of many approaches available. If sufficient substitutes exist, the patent holder may hold little or no power in a properly defined market. In short, although a patent, in theory, could convey monopoly power, it does not necessarily convey market power and in many cases, it will not.¹⁷³

171. 2A PHILLIP E. AREEDA, HERBERT HOVENKAMP & JOHN L. SALOW, *ANTITRUST LAW* ¶ 501, at 90 (2d ed. 2002) ("The substantial market power that concerns antitrust law arises when the defendant (1) can profitably set prices well above its costs and (2) enjoys some protection against a rival's entry or expansion that would erode such supracompetitive prices and profits."); LAWRENCE A. SULLIVAN & WARREN S. GRIMES, *THE LAW OF ANTITRUST* § 2.1, at 21 (2000) ("Antitrust is concerned with the power of market participants to distort the competitive process . . . [w]ithout power, a market participant can do none of these things, but is, instead, itself subject to the discipline of competition . . . [Market power] is a prerequisite for finding an antitrust violation."). *But see* Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power over Price*, 96 *YALE L.J.* 209, 251 (1986) ("[A] firm need not enjoy or acquire traditional market power to gain the ability to price above pre-exclusionary-rights competitive levels. The strategy requires only barriers to entry and expansion in the output market to succeed.").

The ability to raise prices and restrict output is a difficult element to measure. Thus, courts use market share as a proxy for market power. *See* 2A AREEDA ET AL., *ANTITRUST LAW*, *supra* ¶ 423, at 82; *see also id.* ¶ 801 at 319 (noting that although one cannot be too categorical, market shares exceeding 75% are sufficient to show market power while market shares below 50% are insufficient).

172. Machlup, *supra* note 13, at 12; *see also* HERBERT HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW* § 8.3, at 219 (1985) ("Many patents confer absolutely no market power on their owners The economic case for 'presuming' sufficient market power . . . is very weak."); Nat'l Inst. on Indus. & Intellectual Prop., *The Value of Patents and Other Legally Protected Commercial Rights*, 53 *ANTITRUST L.J.* 535, 547 (1985) ("Statistical studies suggest that the vast majority of all patents confer very little monopoly power"); William Montgomery, *The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements*, 85 *COLUM. L. REV.* 1140, 1156 (1985) ("More often than not, however, a patent or copyright provides little, if any, market power."); *A.I. Root Co. v. Computer/Dynamics, Inc.*, 806 F.2d 673, 676 (6th Cir. 1986) (court "reject[ed] any absolute presumption of market power for copyright or patented product"); *USM Corp. v. SPS Technologies Inc.*, 694 F.2d 505, 511-12 (7th Cir. 1982) (noting that not all patents confer market power).

173. The fact that a patent does not necessarily convey market power is now commonly accepted by scholars, although the case law is less clear. *See, e.g.*, *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 37 n.7 (1984) ("A common misconception has been that a patent . . . suffice[s] to demonstrate market power [A] patent holder has no market power in any relevant sense if there are close substitutes for the patented product."); *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 10 n.8, (1958) ("Of course it is common knowledge that a patent does not always confer market power over a particular commodity. Often the patent is limited to a unique form or improvement of the product and the eco-

Where no market power exists, antitrust would be unconcerned by extensions of the time or scope of the patent. This would be understandable given that antitrust is only concerned with certain types of effects in the marketplace.

As described above, however, we limit the time and scope of a patent, not just to limit anticompetitive effects the way those words are defined under antitrust law but to limit other detrimental effects of the patent system as well. Thus, patent policy does not limit its concerns to firms with market power.

For example, consider a firm that has extended the time of its patent grant by requiring that all licensees agree that after the patent has expired, they will continue in perpetuity to operate as if the patent remains in force. The patent holder thereby extends its patent rights, at least in relation to its current licensees, through private contract.

The antitrust rule of reason would not raise any objections unless the firm had market power. Patent law, however, would not permit a perpetual extension of patent rights through contract for any patent holder.¹⁷⁴ If it did, we would be changing the patent rules to say that a patent lasts for twenty years, but the twenty-year limit only applies fully to patent holders who have market power.¹⁷⁵

Thus, under a patent analysis, we may forbid an activity that extends the length of a patent grant even if that extension does not create the type of anticompetitive effects that antitrust law would recognize. Limiting the inquiry to behavior that violates antitrust law ignores significant issues for patent policy.

Shifting the focus of inquiry from applying antitrust rules to applying patent principles may bring less certainty to patent misuse, at least in the short run. In recent decades, antitrust law has developed into a larger and more robust body of law. It will take some time for courts to develop more fully the tests and elements that will be faithful to patent principles to the greatest extent possible.

monic power resulting from the patent privileges is slight.”); *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1368 (Fed. Cir. 1998) (noting that courts will not presume that the patent holder’s “right to exclude necessarily establishes market power in antitrust terms”); ABA SECTION OF ANTITRUST LAW, THE 1995 FEDERAL ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY: COMMENTARY AND TEXT 17–18 [hereinafter *FTC/DOJ GUIDELINES*] (explaining that an important corollary to the guidelines published jointly by the FTC and DOJ is that intellectual property rights are not presumed to confer market power although noting that the case law is unclear).

174. Even contracts limited to perpetual royalties would not be permitted under patent law. See CHISUM, *supra* note 7, § 19.04 [3][d], at 19-492 (noting that a provision in a patent license for payment of royalties on use after expiration of the patent is unenforceable).

175. Note that an extension of rights by contract is not the same as a full extension of the patent, given that the extended rights only apply to those affected by the contract.

IV. REACH-THROUGH ROYALTIES: THE PROBLEM APPLIED IN A MODERN SETTING

The prior section explained that antitrust tests are not designed to capture all of the behavior that raises concerns under patent policy. This section describes Reach-Through Royalties as an example of the insufficiency of testing for patent misuse by applying antitrust rules.

Reach-Through Royalties are a licensing arrangement used in the biotech industry to license what are known as "research tools." Research tools are not products sold to consumers, but rather products used to develop the medicines, treatments, and medical tests that later will be sold to consumers.

Research tools comprise a broad category of materials. The National Institutes of Health (NIH), in guidelines for grant recipients who use or create research tools, define the term "research tool" to embrace the full range of tools that scientists use in the laboratory, including cell lines,¹⁷⁶ monoclonal antibodies,¹⁷⁷ reagents,¹⁷⁸ animal models,¹⁷⁹ growth factors,¹⁸⁰

176. Vertebrate cells in a culture environment generally die after a finite number of divisions. See BRUCE ALBERTS ET AL., *MOLECULAR BIOLOGY OF THE CELL* 160 (3d ed. 1994). The limited life span makes it difficult to study human tissue cells outside of the human body. Using genetic or other manipulations, however, scientists can create populations of cells that replicate indefinitely in a culture. See BIOPHARM, *THE BIOPHARM GUIDE TO BIO TERMINOLOGY* 16 (2002). These are known as cell lines, a term generally defined as populations of plant or animal cells capable of dividing indefinitely in a culture. See ALBERTS ET AL., *supra*, at G-5.

177. Antibodies are proteins produced in the blood. See MEDICAL RESEARCH COUNCIL, *RESEARCH IN FOCUS: MONOCLONAL ANTIBODIES*, http://www.mrc.ac.uk/pdf_mon_antibodies.pdf (last visited Oct. 13, 2003). They recognize and bind to foreign invaders, singling them out for elimination by the body's immune defenses. *Id.* Monoclonal antibodies are populations of identical cells grown in a culture that are developed to secrete a single antibody and are immortalized, that is, can replicate indefinitely. See VOET ET AL., *FUNDAMENTALS OF BIOCHEMISTRY* 677 (2002). Monoclonal antibodies are used to identify diseases, test for the presence of substances in body tissues and may someday function as therapeutic agents. *Id.*

178. A reagent is a substance used to create a desired chemical transformation either by entering into and being altered by the chemical reaction or by providing the necessary environment for the reaction to occur. See MARY MAIER, *INTRODUCTION TO CHEMICAL SCIENCE* 369 (1978); JAMES B. HENDRICKSON ET AL., *ORGANIC CHEMISTRY* 342 (3d ed. 1970).

179. An animal model is a living organism in which a spontaneous or induced pathological process can be investigated that resembles a phenomenon in humans or other animals. See Joe R. Held, *Appropriate Animal Models*, in *THE ROLE OF ANIMALS IN BIOMEDICAL RESEARCH* 13, 13-15 (Jeri A. Sechzer ed., 1983).

180. Growth factors are proteins that must be present in the environment surrounding the cell, for example in the culture or animal body, for the growth and normal development of certain types of cells. See NEIL A. CAMPBELL, *BIOLOGY* 915 (4th ed. 1996). Growth factors are involved in many cellular processes including (1) inducing the synthesis of specific factors essential to the production of the enzymes of DNA synthesis and (2) promoting differentiation, that is, signaling progenitor cell types such as stem cells to develop into specific cell types such as blood cells or nerve cells. See ALBERT L. LEHNINGER ET AL., *PRINCIPLES OF BIOCHEMISTRY* 472 (3d ed. 2000).

combinatorial chemistry¹⁸¹ and DNA libraries,¹⁸² clones¹⁸³ and cloning tools (such as PCR¹⁸⁴), methods,¹⁸⁵ laboratory equipment, and machines.¹⁸⁶ For example, with the knowledge that human genes can be sequenced, spliced, and shuttled between organisms, we now recognize that humans contain a large number of proteins that play a significant role in human health and that may be subject to therapeutic manipulation.¹⁸⁷ In this pursuit, some companies have compiled large chemical "libraries" and devices that can screen an extensive number of potential targets to look for substances that inhibit or activate specific proteins in the human body.¹⁸⁸ Such research may be aimed at finding a chemical that will operate on a particular protein or it may be aimed at screening a large number of human proteins hoping that one will be inhibited in a way that can be developed into a life sciences product of some kind.

When a company purchases the rights to use a research tool, neither the company nor the patent holder knows whether the research will be successful. Much life sciences research is unsuccessful. For example, of

181. In combinatorial chemistry, researchers try to synthesize and assemble large groups of compounds so that a particular substance can be exposed quickly to a wide range of compounds to search for potential biological reactions. See Stu Borman, *Reducing Time to Drug Discovery*, 77 (10) CHEMICAL & ENGINEERING NEWS, Mar. 8, 1999, at 33; Stu Borman, *Combinatorial Chemistry*, CHEMICAL & ENGINEERING NEWS, Apr. 6, 1998; see also Jeffrey Hanke, *Genomics and New Technologies as Catalysts for Change in the Drug Discovery Paradigm*, J.L. MED. & ETHICS (2000) (describing state-of-the-art approaches to computational chemistry). The process can be expensive and difficult to accomplish with the desired speed and accuracy. See *id.* For a description of combinatorial chemistry efforts at a variety of biotech companies, see Borman, *Combinatorial Chemistry*, *supra*; see also Edward N. Trifonov, *Earliest Pages of Bioinformatics*, 16 (1) BIOINFORMATICS 5 (2000) (describing the early development of the field).

182. To create a DNA library, the DNA of an organism is isolated and cleaved into thousands of fragments which are then cloned. See VOET ET AL., *supra* note 177, at 67-68. The library thus consists of a collection of cloned fragments representing all or most of the DNA of a living organism. See LEHNINGER ET AL., *supra* note 180, at 1128-29.

183. Clones are descendants of a single cell, and cloning is the production of large numbers of identical DNA molecules or cells from a single ancestral molecule or cell. See LEHNINGER ET AL., *supra* note 180, at 986-98.

184. Polymerase Chain Reaction, known as PCR, is a repetitive process that exponentially reproduces a specific segment of DNA. See *id.*; BIOPHARM, *supra* note 176, at 46.

185. Different aspects of cloning methods could include: (1) methods for cutting DNA at precise locations; (2) methods for joining two DNA fragments; (3) methods for selection of a small molecule of DNA capable of self-replication; (4) methods for moving the genetically altered DNA from the test tube into a host cell that can provide the enzymatic machinery for DNA replication; and (5) methods to select or identify the host cells that contain the genetically altered DNA. See LEHNINGER ET AL., *supra* note 180, at 985-93. In addition, the term "methods" in the NIH Guidelines could refer to methods other than those related to cloning.

186. Principles and Guidelines for Recipients of NIH Research Grants and Contracts on Obtaining and Disseminating Biomedical Research Resources: Final Notice, 64 Fed. Reg. 72,090, 72,092 n.1 (Dec. 23, 1999) [hereinafter NIH Guidelines].

187. Hanke, *supra* note 181.

188. *Id.*

the thousands of chemicals and targets screened, only a tiny fraction will prove useful even for further investigation, to say nothing of leading to an actual pharmaceutical product. Among those inquiries that succeed, however, a rare few will lead to blockbuster drugs or products that produce billions of dollars in returns.¹⁸⁹ In response to this environment, some patent holders have charged royalties measured as a percentage of the final product created through a process which included using the research tool.¹⁹⁰ As described in Congressional testimony, such payments provide revenues from any downstream commercial products to those who own intellectual property that may now be of uncertain value or utility.¹⁹¹

For example, suppose John holds the patent on a cloning method. In exchange for a license to use the cloning method, Mary agrees to pay a percentage of sales from any medicine or other product she may eventually develop from what she discovers using the cloning method.

Reach-Through Royalties have been criticized for creating a royalty stacking effect in which downstream research and production may be prevented or hampered by the presence of too many rights holders.¹⁹² This is particularly problematic if multiple Reach-Through Royalties are added as the product moves through research, development, and production. For example, Heller and Eisenberg argue that reach-through licensing agreements give upstream patent holders a continuing presence at the downstream bargaining table.¹⁹³ As owners stack overlapping and in-

189. For example, Lipitor, a cholesterol lowering drug developed by Pfizer, generated almost \$8 billion in sales in 2002. The antidepressant drug, Zoloft, earned \$2.7 billion while Viagra, the erectile dysfunction drug, earned \$1.7 billion during the same period. See Tanja Sturm, *Pfizer Profits Rise on Blockbuster Drugs*, WORLD MARKETS CENTRE RESEARCH ANALYSIS, Jan. 23, 2003, LEXIS, News Library. One scholar compares research tools to mining tools during the Gold Rush era, a useful analogy in light of the tantalizing promise of fantastic returns compared to the many miners who earned little or nothing. See James Gregory Cullen, *Panning for Biotechnology Gold: Reach-Through Royalty Damage Awards for Infringing Uses of Patented Molecular Sieves*, 39 J.L. & TECH. 553, 553 (1999).

190. Some would classify Reach-Through Royalties as part of a broader category of agreements including exclusive or nonexclusive licenses on future discoveries or options to purchase such licenses. See Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998); Paul F. Fehner, *Biotech Research Tools*, NAT'L L.J., July 10, 2000, at B9.

191. See Testimony of Dr. Harold Varmus, President of Memorial Sloan-Kettering Cancer Center, Hearing on Gene Patents and Other Genomic Inventions, House Judiciary Subcommittee on Courts & Intellectual Property (July 13, 2000), available at <http://www.house.gov/judiciary/varmo713.htm>.

192. See, e.g., Fehner, *supra* note 190, at 139; Rebecca S. Eisenberg, *Technology Transfer and the Genome Project: Problems with Patenting Research Tools*, 5 RISK: HEALTH, SAFETY & ENVTL. 163, 172 (1994); Gene Patents and Other Genomic Inventions, *supra* note 191 (reach-through provisions result in sub-optimal use and discourage the vigorous development of the discovery).

193. Heller & Eisenberg, *supra* note 190, at 698–99.

consistent claims on downstream products, the result is an anticommons effect in which the resource is underutilized.¹⁹⁴

Royalty stacking is one of a number of problems plaguing a biotech industry in which so many parties have partial ties or interests in so many elements that it is difficult for researchers or product developers to operate. The result is not only underutilization of current intellectual property, but also a diminution in the next generation of research tools and products.¹⁹⁵ In response to these concerns, NIH guidelines strongly discourage the use of Reach-Through Royalties.¹⁹⁶

Arguments in favor of Reach-Through Royalties include that the arrangement allows parties to receive research tools at reduced or nominal up-front costs.¹⁹⁷ From this perspective, Reach-Through Royalties may facilitate the use and dissemination of scientific knowledge, allowing cash-starved companies to purchase research tools and permitting innovative outsourcing arrangements.¹⁹⁸

Similarly, one could argue that Reach-Through Royalties allow inventors to coax customers into using their products by offering to share the risk. In other words, John convinces Mary to buy his product by sharing in the risk that Mary will fail.

Finally, one could argue that Reach-Through Royalties should be allowed because they solve an uncertainty problem. The parties do not know how much to value John's invention and thus leave the question of valuation open to a later date. Once again, the arrangement facilitates the transaction between the parties, thereby encouraging the use of the invention.

194. *Id.* at 698–701; see also John H. Barton, *Research-Tool Patents: Issues for Health in the Developing World*, 80(2) BULL. WORLD HEALTH ORG. 121 (2002) (describing ways in which purchasers have tried to avoid Reach-Through Royalties, including moving research off-shore).

195. See generally Heller & Eisenberg, *supra* note 190.

196. See NIH Guidelines *supra* note 186, at 72,093. Principles and Guidelines for Recipients of NIH Research Grants and Contracts on Obtaining and Disseminating Biomedical Research Resources: Final Notice, NATIONAL INSTITUTES OF HEALTH (published at 64 C.R.R. 72090) (Dec. 23, 1999) [hereinafter NIH Guidelines].

Reach-through royalty or product rights [lead to] unreasonable restraints on publication and academic freedom, and improper valuation of tools impede the scientific process whether imposed by a not-for-profit or for-profit provider of research tools. While these Principles are directly applicable only to recipients of NIH funding, it is hoped that other not-for-profit and for-profit organizations will adopt similar policies and refrain from seeking unreasonable restrictions or conditions when sharing materials.

Id. at Principle #3.

197. See NIH Guidelines, *supra* note 186, at 72,091.

198. See *id.* (noting the reduction of up-front costs for purchasers); Steven Maebius, *The University Office of Technology Transfer: The Attorney's Perspective*, 5 CASRIP STREAMLINING INT'L INTELL. PROP. 90, 91 (1999) (describing reach-through royalties as the cost of out-sourcing R&D to the biotech industry).

The NIH has found this line of argument unpersuasive, however, noting that although a Reach-Through Royalty may be attractive to the parties, it has the effect of creating restricted access to subsequent tools and adding to the general proliferation of ties and competing interests that is the source of current access problems throughout the field.¹⁹⁹ In other words, while the arrangement eases an access problem for the parties, it increases access problems for the system as a whole. The NIH, therefore, rejects the notion that one should evaluate Reach-Through Royalties solely from the perspective of the participants involved, considering instead the systemic effects of Reach-Through Royalties in the context of the goals of the patent system.²⁰⁰

The legal status of Reach-Through Royalties is unclear. There are few judicial or administrative pronouncements available, and the ones that exist are in conflict. As noted above, NIH guidelines discourage the use of Reach-Through Royalties.²⁰¹ In contrast, a district court recently ruled that a license provision with Reach-Through Royalties did not constitute misuse.²⁰² In recent Congressional hearings, one industry expert noted the need for clarification on whether Reach-Through Royalties create antitrust or patent misuse problems, arguing that clear approval or disapproval would be better than the current uncertainty.²⁰³

Reach-Through Royalties should raise patent misuse concerns both for extending the time of a patent and for expanding the scope of a patent.²⁰⁴ For example, Reach-Through Royalties may result in royalties

199. See NIH Guidelines, *supra* note 186, at 72,093.

200. Kaplow similarly stresses the importance of considering the impact on the system as a whole rather than on the individual parties. For example, Kaplow criticizes the notion that one can evaluate a particular practice by calculating whether an individual party is extracting more reward than contemplated by the patent system. He argues that the approach is wrong in that it focuses solely on change in reward, to the exclusion of change in societal costs, and on the individual parties, rather than on the system as a whole. Compare Kaplow, *supra* note 1, at 1821 (criticizing the assumption that the only factor relevant in assessing various patent practices is the amount of reward available to the individual patent holder as opposed to recognizing the need to assess all of the variables necessary to compare the change in overall social cost to overall social benefit), with *USM Corp. v. SPS Tech. Inc.*, 694 F.2d 505, 511 (7th Cir. 1982) (framing the relevant question as whether the individual is extracting more reward than contemplated by the patent system).

201. See NIH Guidelines, *supra* note 186, at 72,093.

202. See *Bayer AG v. Housey Pharm., Inc.*, 228 F. Supp. 2d 467 (D. Del. 2002).

203. See Testimony of Dr. David Earp, Federal Trade Commission Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Feb 26, 2002, available at <http://www.ftc.gov/opp/intellect/020226trans.pdf> (held at the Haas School of Business) (tr. p. 269-73) [hereinafter FTC Hearings].

204. Two other topics present variations on the Reach-Through Royalty theme. The first is the use of Reach-Through payments, not as a contract between parties, but as a remedy imposed by a court for infringement. See Cullem, *supra* note 189, at 562-63 (arguing in favor of Reach-Through Damages). The second is the use of so-called Reach-Through Claims in a patent application. For example, an application for a method of screening to identify compounds with a certain biological activity, could

paid long after the patent on the research tool has expired. Ordinarily, when the patent term ends, royalties should end, and the invention should be dedicated to the public domain. Thus, Reach-Through Royalties, at first blush, appear to extend the time of the patent beyond the time contemplated by patent law.

Given that the research tool may be used in early-stage research, one could argue that although the royalty will be paid after the patent expires, it is a payment for the use of the invention before the patent expires. This argument could suggest that the payment is analogous to an extended payment contract: I use your product now, but I can pay for it over an extended period of time. In fact, the recent district court decision holding that a license containing a Reach-Through Royalty provision did not constitute misuse rested on the notion that the license did not improperly extend the time of the grant because the invention would be used during the term of the patent, although royalties would be paid and determined later.²⁰⁵

also contain product claims directed to the compounds identified using the assays and pharmaceutical compositions containing such compounds. See Vicky Clark, *Reach-Through Infringement: What Are the Limits?*, BIO-SCIENCE L. REV. (2002), at <http://pharmalicensing.com/features/legal>; see also Stephen G. Kumin et al., *Reach-Through Claims in the Age of Biotechnology*, 51 AM. U. L. REV. 609 (2002); *Univ. of Rochester v. G.D. Searle & Co.*, 249 F. Supp. 2d 216, 218 (W.D.N.Y. 2003) (infringement claim failed because patent merely described a general plan for creating pain relief medication and was thus held to be invalid as an “attempt to preempt the future before it has arrived.”); Although Reach-Through Damage Awards and Reach-Through Claims may present issues similar to those raised by Reach-Through Royalties, they also present other issues that are beyond the scope of this article. See, e.g., *Intra-Video Inc. v. Hughes Elecs. Corp.*, 51 USPQ 2d 1383, 1384 (S.D.N.Y. 1999) (arguing that proposing a damage theory that includes royalties beyond the expiration of the patent does not constitute misuse because a damage theory is not developed in the course of a business dealing related to the patent).

205. See *Bayer AG*, 228 F. Supp. 2d at 472–73. The court did concede that neither party submitted any evidence to prove that royalties would be collected only for use prior to the expiration of the patent. *Id.* at 472 n.5. The reality may be different in that parties may return to pre-clinical research, which could include the use of research tools, when later research yields imperfect results.

One could avoid the time extension problem by structuring the license so that the Reach-Through Royalties are paid only until the patent expires. Any misuse inquiry would then turn on possible extensions of the scope of the patent, rather than the time of the patent.

The *Bayer* court considered and rejected a charge of extending the scope of the patent. The court followed the *Brulotte* line of cases and held that the arrangement must have been for the convenience of the parties because the plaintiff presented no evidence that it had suggested other licensing approaches during negotiations. *Id.* at 470–71. Interestingly, the court engaged in no antitrust or rule of reason analysis at all. Although it cited the modern cases from the Federal Circuit, the *Bayer* court declined to engage in this type of analysis on the ground that it had found no improper extension of the grant under the *Brulotte*-type inquiry: “Due to the court’s finding that defendant’s acts do not constitute patent misuse, it will be unnecessary for the court to address the presence or absence of an anti-competitive effect.” *Id.* at 469 n.2. Thus, the *Bayer* court’s approach would require a full two-step inquiry in which a court first engages in a *Brulotte* balancing analysis to determine whether the parties acted beyond the time or scope of the patent based on the absence or presence of voluntariness, and then engages in a rule of reason or *per se* analysis.

Even if the use would occur during the patent period, however, extending the time for determining the value of the use is inconsistent with the current design of the patent system. Extending the valuation time violates the notion that patent holders have a limited time to capture a return on their inventions.

A patent is not a guarantee that a patent holder will earn anything. It is a time-limited opportunity to try to capture a return on an invention. The market may not be ready, for example, to appreciate the invention during the patent period. Nevertheless, one cannot ask the patent office to extend the patent for a few years on the grounds that the invention was ahead of its time and the market simply was not ready to appreciate its value. The market's inability to recognize or calculate the value of an invention is one of the hazards of having a limited patent term.

As described above, the patent system has strong policy reasons for limiting the time of a patent grant. These include not only concerns related to anticompetitive effects but also concerns related to limiting wasteful and duplicative activities and creating disincentives to future inventors. Leaving open the time for determining and capturing the value of an invention threatens the overall balances struck by the current patent system. In particular, it shifts the patent system's current allocation of reward between those who participate in the early stage of inventions and those who participate in later stages of invention.

As noted, the process of invention is often evolutionary with one invention building on those that have gone before. While early stage inventors make an initial leap forward, later stage inventors create further developments. Thus, many inventions are the product of successive contributions by multiple inventors.

The structure of the patent system limits the reward that may be gained by early stage inventors in comparison to those who come later.²⁰⁶ Such limits enhance the overall progress of science by ensuring that those who create initial steps do not discourage those who would take the next steps by aggregating too much of the total available reward to those at the early stages.

By leaving open the time for calculating the value of a current use, Reach-Through Royalties shift a greater portion of the total reward

206. Relevant structural elements include, for example, the rule limiting the time in which an inventor may try to capture a return on the invention, rules requiring a specific use for an invention and limiting the protection to that use, other rules relating to the scope of a patent, rules on blocking patents, and the reverse doctrine of equivalents. See Lemley, *supra* note 1, at 991–93, 1000–13 (in the context of improvements, describing how time, scope, and other aspects of the patent system strike a balance between the rights of original developers and subsequent improvers). For discussions of the economics of early stage and later stage invention, see also other sources cited *supra* at note 166.

available for an invention to those who contribute to the early stages of invention leaving less for those who contribute later. This discourages later invention and disrupts the balances implicit in the current patent system.

In addition, increasing the time for determining the reward to research tool developers enhances the wasteful and duplicative activity of defensive research. Defensive research occurs when a patent holder tries to anticipate all possible alternative solutions to the problem solved by the patent, even inferior solutions, and to obtain protection for those alternate solutions.²⁰⁷

The greater the potential reward, the more a patent holder will be willing to spend protecting that reward. Extending the period in which valuation may come to fruition greatly increases the potential reward. Thus, patent holders will rationally spend more on the duplicative activity of defensive research.²⁰⁸

In light of these problems, Reach-Through Royalties raise serious concerns regarding improper extension of the patent term. An antitrust analysis, however, would not be sensitive enough to recognize these concerns across the full range of firms that could be affected. Antitrust would only be concerned in the case of a firm with market power.²⁰⁹ Many inventions licensed through Reach-through Royalties would not command market power.²¹⁰

The 1995 Federal Trade Commission/Department of Justice Guidelines on Licensing Intellectual Property discuss the evaluation of another licensing practice, grant-backs.²¹¹ In a grant-back, the license holder agrees to give the patent holder the right to use any improvements that the licensee may make to the patented technology. The grant-back dis-

207. See sources cited *supra* notes 163-64.

208. Although the size of the reward alone is not the relevant criteria for determining patent misuse, the size of the reward is not irrelevant. See *supra* notes 1, 200 (discussing Kaplow). For example, increasing the reward matters when an increase produces other relevant systemic effects, such as increasing duplicative activity. It may also matter for calculating the change in the overall systemic effect.

209. During FTC hearings, Dr. Earp described a particularly vexing problem for those who advise biotech companies on issues that might require a determination of market power. Research tool licenses, such as those that would contain Reach-Through Royalties, generally are entered into at an early stage of development. At that time, the company has no product and no market power. Even a very conservative outside counsel might conclude that the license agreement presents no problem. When the agreement is actually scrutinized years down the road, the product may be quite successful. A market power analysis could yield considerably different results. See FTC Hearings, *supra* note 203, at 271-72.

210. See *supra* text accompanying notes 171-73 (a patent does not necessarily convey market power).

211. FTC/DOJ GUIDELINES, *supra* note 173, at 63-64.

cussion provides insight into the way in which antitrust principles would be applied to Reach-Through Royalties.

The guidelines note that grant-backs should be tested under the rule of reason, and that an important factor in the analysis will be whether the patent holder has market power.²¹² In contrast, patent policy would not limit concerns to firms with market power.

In addition to the time extension issues, Reach-Through Royalties also raise concerns about expanding the scope of the patent. These concerns can be highlighted using the following risk analysis: John, who eventually receives the patent, begins by taking a chance. He invests time and money in hopes that he will invent something and succeed in capturing a return. The possibility of receiving a patent gives John a greater incentive to take that risk by improving the chances that he will be able to make a return on the investment.

With a Reach-Through Royalty, John licenses his research tool to Mary, and they share in the risk of whether Mary will hit the jackpot. The problem is that the gamble is not based on whether *John* invents anything. The gamble is based on whether *Mary* invents anything. In other words, John is using his patent to get a return based on someone else's invention.

To decide whether this is a problem, one would have to analyze the type of harm and decide whether it is a harm that causes concern. From an antitrust perspective, we might not care. You can get any price you want for your patent, as long as you are not creating the types of market effects that raise antitrust concerns—effects that, at the very least, require market power.

Patent policy, however, would be concerned because the price extracted implicates patent policies outside of those related to anticompetitive effects in a particular market. For example, the heart of patent policy is promoting the progress of science. Reach-Through Royalties create system-wide effects that may hinder the overall progress of science.

As described above, Reach-Through Royalties create royalty stacking effects that may result in underutilization of both Mary's product and future generations of products. Royalty stacking results in the presence of too many rights holders which inhibits the efficient exploitation of the invention. The problem not only limits exploitation of the current invention, it also hinders development of the future products that might emerge if full exploitation of the product occurred. For example, limiting

212. *Id.* at 107–08.

the use of a research tool limits the products that may be invented using that research tool.

A behavior that retards the progress of science would be of concern to patent policy. This would be true even if it is in the interests of both parties to the transaction because patent policy is concerned with the system-wide effects of the behavior on promoting the progress of science.

Current antitrust tests are not attuned to this type of problem. In a typical antitrust analysis, we would view the potential problem in terms of John extending the power that he has gained in his product market by virtue of his patent into the market for Mary's products. We would worry about the potential for John to dominate Mary's product market, behavior that will harm competition in the market for Mary's product.

With a Reach-Through Royalty, however, the problem is different. John is having an impact on the market for Mary's product, but it has nothing to do with trying to dominate the market for Mary's product. Royalty stacking is a different type of problem.

In a world of perfect information, one might ask why John would be willing to risk the possibility of royalty stacking and underutilization. After all, John wants Mary to be able to sell products, too. In the rough and tumble world of bio-tech start-ups, however, the behavior may be rational. John may not be faced with a choice of (1) earning an assured return from Mary with a regular royalty versus (2) the possibility of earning more return with a Reach-Through Royalty balanced against the risk of limiting the return if the royalty creates underutilization of Mary's product. Instead, John may be faced with the choice of (1) receiving virtually no return from Mary, because Mary's start-up cannot afford to buy the tool, versus (2) the possibility of getting a piece of an astronomical jackpot. Under those circumstances, John's choice is clear and rational, although it may be detrimental to the patent system as a whole. Patent misuse rules based on whether the agreement is voluntary²¹³ fail to recognize that an agreement may be in the interests of both parties and yet be adverse to the interests of the patent system as a whole.

One could argue that Reach-Through Royalties are no different from an arrangement in which a patent holder contributes patent rights in exchange for an equity interest in the development company. With an equity exchange, the patent holder has transformed the patent into a vehicle that may bring variable rewards far out in the future.

213. See *supra* text accompanying notes 81-91 (discussing the suggestion in *Radio 2* that the validity of certain scope extensions should turn on whether the licensee entered into the agreement voluntarily).

An equity exchange, however, would not create the royalty stacking problem of Reach-Through Royalties. One who would use the downstream product negotiates only with one entity, Mary's entity, which then shares its gains or losses with its equity stakeholders. There is no anti-commons problem.

In short, Reach-Through Royalties demonstrate the insufficiency of an antitrust analysis for patent misuse. If we test for patent misuse by applying antitrust principles, Reach-Through Royalties ordinarily will not generate a cognizable harm. If we test for patent misuse by applying patent principles, however, Reach-Through Royalties raise serious concerns both in terms of extending the time of the patent as well as expanding the scope of the patent. These concerns are based on economic effects beyond the type and level of anticompetitive effects that antitrust law is designed to detect. If we limit our misuse inquiry to antitrust principles, we will be blind to significant concerns under patent policy.

CONCLUSION

Problems at the intersection of patent misuse and antitrust cannot be eased by requiring the application of antitrust rules to test for patent misuse. Nevertheless, in the last decade, the Federal Circuit has reframed the doctrine of patent misuse by taking this approach. The Federal Circuit's approach is inconsistent with legislative and judicial precedent and threatens to distort both patent and antitrust law. More importantly, an antitrust analysis is insufficient to capture the full range of policy concerns embodied in patent law.
